



# CVJ AFRICA

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## PAFCIC – Complex PCI 2018

### The Panafrikan Course on Interventional Cardiology

18 – 20 October 2018

Radisson Blu Hotel, Nairobi, Kenya



## **Disclaimer**

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# Joint Congress PAFCIC – Complex PCI 2018



October 18–20, 2018, Nairobi, KENYA



**STCCCV**  
Société Tunisienne de Cardiologie  
& de Chirurgie Cardio-Vasculaire



Tunisian Heart Foundation



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## **Programme:**

- Interactive sessions
- Practical workshops
- Key note lectures
- Live transmissions
- Poster and oral presentations sessions
- Satellite symposia
- Sessions for Cath Lab technicians and nurses
- Live in a box sessions
- 4th Africa Fellows Summit

## **Live Transmission Sites:**

- Aga Khan Hospital – Nairobi, Kenya
- Jeddah Hospital – Saudi Arabia
- Cedars Sinai Medical Center – Los Angeles, USA
- Johannesburg, South Africa
- Kings College Hospital, London, UK

## **Main Topics:**

- Percutaneous valve replacement: What is validated and what is the pipeline?
- Percutaneous valve replacement: What is the status in Africa?
- Acute stroke management is changing. How about in Africa?
- Imaging or functional assessment for coronary lesions: FFR – OCT – IVUS necessary in the cath lab?
- Management of high burden thrombus containing lesions
- PCI of long calcified lesions
- Tips and tricks for left main stenting
- Stent Save A Life initiative in Africa: success stories and obstacles
- Recanalisation of chronic total occlusion: When retrograde approach is necessary?
- Cardiac surgery in Africa: What is the current picture?
- Stable CAD: medical therapy vs intervention. Where is the evidence?
- LAA closure, NOAC or just Vit K antagonists in Africa?
- New interventional technologies for heart failure management
- Interventional repair of congenital heart disease
- Intervention therapies for AF
- Peripheral and endovascular intervention
- Vein interventions

# Thursday October 18th, 2018

## 08:30 – 10:30 Acute Coronary Syndromes in Africa

**Chairs:** Charles Kariuki – Mohamed Jeilan

**Pannelists:** Abdallah Mahdhaoui, Sondos Kraiem, Salim Ben Khedda, Peter Ogutu, Omar Ait Mokhtar, Leila Hached

Introduction – session objectives

*Mohamed Jeilan, Kenya*

Current management of STEMI in Africa: Thrombolysis, PPCI or nothing

*Habib Gamra, Tunisia*

**Case 1: Primary PCI in a MVD patient**

Stent thrombosis, predictors, prevention

*Charles Kariuki, Kenya*

ACS patients with previous revascularisation

*Jonathan Byrne, UK*

Dealing with bystander disease in Africa

*Mzee Ngunga, Kenya*

**Case 2: PCI following thrombolysis**

Thrombus aspiration

*Leila Hached, Tunisia*

No reflow phenomenon

*Samir Ahnia, Algeria*

IIb IIIa inhibitors

*Abubakr Khalil, Ireland*

DAPT duration

*Harun Otieno, Kenya*

Stent Save A Life Initiative in Africa: What is the status?

*Harun Otieno, Kenya*

**A memorable case from Kam Chitkara (5 min)**

## 10:30 – 11:00 Coffe Break and Visit of Exhibitions

## 11:00 – 12:30 Live Transmission from Jeddah (KSA)

### All about CTO

**Chairs:** Ahmed Suliman – Habib Gamra

**Panelists:** Rachid Boujenah, Leila Hached, Peter Oguto, Emmy Okello, Charles Kariuki, Jamal Nasruddin

Introduction – session objectives

*Ahmed Suliman, Sudan*

Live Transmission:

Operator: *Khalid Tammam, Jeddah (KSA)*

Case selection for CTO PCI: When do we have to do it?

*Mohamed Jeilan, Kenya*

Available tools for CTO recanalisation in 2018: How to select guiding catheters, microcatheters and wires

*Abubakr Khalil, Ireland*

Controlled dissection reentry technique for CTO: an illuastrated case

*Mehdi Ghomidh, Tunisia*

**A memorable case from Kam Chitkara (5 min)**

Summary and key learning

*Habib Gamra, Tunisia*

## 12:30 – 13:00 Opening Ceremony

### Tribute to Bongani Mayosi

**Chairs:** Mohamed Jeilan, Saad Subahi, Mohamed Ben Farhat, Bernard Gitura, Elijah Ogola, Harun Otieno, Habib Gamra

## 13:00 – 14:00 Lunch

**14:00 – 15:30 Live Transmission from Kings College – London**  
**Left main calcification treated with Shockwave**

**Chairs:** Jonathan Byrne – Samir Ahnia – Fehmi Remadi

**Panelists:** Habib Boussadia, Helmi Kammoun, Zahreddine Smiri, Omar Ait Mokhtar

Introduction – session objectives

*Jon Byrne, London, UK*

**Live Case from King's – left main/shockwave therapy ± LV support**

Techniques for managing calcification- old, new and evolving

*Jon Byrne, London, UK*

CHIP and the development of complex PCI- what does this mean for Africa

*Habib Gamra, Tunisia*

The evidence for left ventricular support- who really needs it?

*Abdelmalek Azzouz, Algeria*

**A memorable case from Kam Chitkara (5 min)**

*Kamal Chitkara, UK*

Summary and key learning

*Samir Ahnia, Algeria*

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**15:30 – 16:00 Coffe Break and Visit of Exhibitions Posters Sessions 1& 2**

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**Moderators:** Oussama Ben Rejeb, Hichem Denguir

**16:00 – 18:00 Cath Lab nightmares**  
**Complications you do not want to see again**

**Session supported by GTCI – AGIC – PASCAR IC Task Force**



**Chairs:** Kamal Chitkara, Kais Battikh, Riadh Rihani

**Panelists:** Mohamed Sobhy, Nadhem Hajlaoui, Adel Bouraghda, Anthony Gikonyo, Emmy Okello, Abraha Hailu

**Case Presenters:**

*Hasham Varwani, Kenya*

*Brian kijunda, Uganda*

*Mejdi Ben Messaoud, Tunisia*

*Mohamed Sobhy, Egypt*

*Nazim Magherbi, Algeria*

*Abdeljelil Farhati, Tunisia*

Summary and Key Learnings

*Kamal Chitkara – Kais Battikh – Riadh Rihani*

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**18:00 – 18:30 Posters Sessions 3 & 4**

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**Moderators:** Semia Hajri Ernez, Anissa Joulak

# Friday October 19th, 2018

## 08:30 – 10:30 CSI Africa @ PAFCIC – Complex PCI

<b>Chairs:</b>	Horst Sievert, Nadia Fellat	
<b>Panelists:</b>	Fekria Abid, Abdelfattah Abid, Habiba Drissa, Sonia Hamdi, Mourad Jarrar, Ilyes Neffati, Christine Jowi	
	Introduction – session objectives.	<i>Horst Sievert, Germany</i>
	Management of congenital heart disease in Africa: problems and potential solutions	<i>Abdelfattah Abid, Tunisia</i>
	Hybrid approach for the management of VSD	<i>Ilyes Neffati, Tunisia</i>
	Management of aortic coarctation in Morocco	<i>Nadia Fellat, Morocco</i>
	Renal denervation: is it a promising come back?	<i>Horst Sievert, Germany</i>
	Paravalvular leak closure: what role in Africa?	<i>Abdeljelil Farhati, Tunisia</i>
	Recorded cases of structural and valvular interventions from CSI	<i>Horst Sievert, Germany</i>
	Summary and key learning	<i>Nadia Fellat, Morocco</i>

## 10:30 – 11:00 Coffe Break – Posters Sessions 5 & 6 and Visit of Exhibitions

**Moderators:** Abdeljelil Farhati, Abdelmalek Azzouz

## 11:00 – 12:30 Africa PCR @ PAFCIC – Complex PCI Live Transmission from Johannesburg TAVR/Minimalist approach

<b>Chairs:</b>	Mohamed Sobhy, Jonathan Byrne, Mohamed Jeilan	
<b>Panelists:</b>	Salim Ben Khedda, Soraya Ben Youssef, Abdallah Mahdhaoui, Nadhem Hajlaoui, Morshed Marouane	
	Introduction – session objectives	<i>Mohamed Jeilan, Kenya</i>
	Live transmission from Johannesburg	<i>Operator: Farrel Hellig</i>
	Percutaneous valve replacement: What is validated and what is in the pipeline	<i>Horst Sievert, Germany</i>
	What is the status of percutaneous valve replacement in Africa?	<i>Morshed Marouane, Tunisia</i>
	Affordable percutaneous valve replacement for limited resources countries: A dream?	<i>Horst Sievert, Germany</i>
	Key learning from the live case & the session	<i>Jonathan Byrne, Mohamed Jeilan</i>

## 12:30 – 13:00 Terumo Symposium Live Transmission from Osaka (Japan)

Ultimaster In Complex bifurcation stenting via transradial approach *Shozo Ishihara, Japan*

**Chairs:** Habib Gamra, Harun Otieno

**Panelists:** Habib Boussadia, Helmi Kammoun, Mohamed Hmam, Morched Marouane

## 13:00 – 14:00 Lunch

**14:00 – 15:30 African Fellows Summit**  
**Learning the Technique**

**Chairs:** Rachid Mechmeche, Mzee Ngunga, Fethi Betbout

**Panelists:** Mohamed Sobhy, Nadia Fellat, Christine Jowi, Mohamed Bedru, Habib Gamra

**Learning The Technique**

*Transseptal catheterization*

*Ahmed Suliman, Sudan*

*Balloon mitral valvuloplasty*

*Ahmed Suliman, Sudan*

*The use of snares*

*Riadh Rihani, France*

*IVUS: How to interpret images*

*Jamal Nasruddin, Tanzania*

*CTO Basics*

*Mohamed Jeilan, Kenya*

**14:00 – 15:30 Allied Professional Session**

**Chairs:** Ahmed Suliman, Shem Onger

**Panelists:** Abdellateef M. Abdellateef, Millicent Oloo, Mary Chege, Antony Mwangi, Mejdi Ben Messaoud, Oussama Ben Rejeb

Introduction and session objectives

*Shem Onger, Kenya*

What is the main thing? – lessons from a STEMI case

*Mary Chege, Kenya*

Pharmaco-invasive approach to STEMI. From door to hemostasis

*Abdellateef M. Abdellateef, Sudan*

Cardiogenic Shock – What's teamwork got to do with it?

*Millicent Oloo, Kenya*

Managing a "Code Blue" – Could the process be different in the Cathlab?

*Antony Mwangi, Kenya*

Coronary perforation: Are we ready for it?

*Ahmed Suliman, Sudan*

Summary and Key learning

*Shem Onger, Kenya*

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**15:30 – 16:00 Coffe Break – Posters Sessions 7 & 8 and Visit of Exhibitions**

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**Moderators:** Mejdi Ben Messaoud, Mehdi Ghomidh

**14:00 – 15:30 Live Transmission from Cedars Sinai MC, Los Angeles – USA**  
**Percutaneous tricuspid/Mitral valve repair**

**Chairs:** Mohamed Sobhy, Harun Otieno, Elijah Ogola

**Panelists:** Horst Sievert, Bernard Gitura, Salim Ben Khedda, Abdelfattah Abid, Ali Ben Khalfallah, Habib Gamra

Introduction – session objectives.

*Mohamed Sobhy, Egypt*

Percutaneous tricuspid/ mitral valve repair

*Operator: Raj Makkar (LA, USA)*

Recent innovations in surgical interventions for valvular heart disease

*Peter Ogutu, Kenya*

Key learning from the live case & the session

*Mohamed Sobhy, Harun Otieno, Raj Makkar*

# Saturday October 20th, 2018

## 08:30 – 11:00 Live Transmission from Aga Khan Hospital, Nairobi Calcified long lesions – FFR – Imaging

<b>Chairs:</b>	Kamal Chitkara, Emmy Okello	
<b>Panelists:</b>	Habib Boussadia, Kais Battikh, Jonathan Byrne, Samir Ahnia, Nadhem Hajlaoui	
	Introduction – session objectives	<i>Kamal Chitkara, UK</i>
	Live Transmission from Nairobi	<i>Operators: Mohamed Jeilan &amp; Harun Otieno</i>
	Rotablator step-by-step	<i>Mohamed Jeilan, Kenya</i>
	New technologies for rotablator. The RotaPro console	<i>Harun Otieno, Kenya</i>
	Key learning from the live case & the session	<i>Kamal Chitkara, Emmy Okello</i>

## 10:00 – 10:30 Coffee Break – Posters Sessions 9 & 10 and Visit of Exhibitions

**Moderators:** Anissa Gharbi, Mehdi Ghomidh

## 10:30 – 11:30 Interventions for Stroke

*Session supported by WIST*



<b>Chairs:</b>	Harun Otieno, Horst Sievert	
<b>Panelists:</b>	Mourad Gahbiche, Youssef Ben Ameer, Sonia Chabrak, Sana Ouali	
	AF ablation: Indications, Techniques, results	<i>Mohamed Salim, Kenya</i>
	LA Appendage closure step by step	<i>Habib Gamra, Tunisia</i>
	Acute stroke intervention	<i>Horst Sievert, Germany</i>
	Antithrombotics and antiplatelets for the prevention of stroke	<i>Dilraj Sokh, Kenya</i>
	Summary and key learning	<i>Harun Otieno, Kenya</i>

## 11:30 – 12:30 Peripheral/Endovascular Interventions

<b>Chairs:</b>	Hardeep Gill, Khalil Hamza, Horst Sievert	
<b>Panelists:</b>	Riadh Rihani, Mohamed Hmam, Omar Ait Mokhtar, Ahmed Suliman, Adel Bouraghda	
	Percutaneous intervention for below knee peripheral artery disease: The role of endovascular therapy in the treatment of diabetic foot	<i>Khalil Hamza, Tunisia</i>
	Percutaneous intervention for aortic dissection	<i>Hardeep Gill, Kenya</i>
	Percutaneous intervention of abdominal aortic aneurysms	<i>Rajvit Sagoo, Kenya</i>
	Varicose veins of the lower limbs: Current indications and techniques of endovenous treatment	<i>Khalil Hamza, Tunisia</i>

## 12:30 – 13:00 Closing Keynote lecture

	Trials of the year and the way forward	<i>Jonathan Byrne, UK</i>
	Closing Remarks / Meeting Highlights	<i>Habib Gamra, Mohamed Jeilan</i>

Poster No.	Session	Surname	Name	Title
P 001	<b>Session 1 + 2: 15H30 – 16H00 Thursday 18 October 2018</b>	Abdallah	Marwa	Does myocardial bridge has an impact on myocardial perfusion and what are the clinical outcomes in patients without coronary atherosclerosis?
P 002		Abdallah	Marwa	Double outlet left ventricle (DOLV): case report
P 003		Abdallah	Marwa	Glenn bypass steal by the azygos vein treated by transcatheter occlusion: a case report
P 004		Abdallah	Marwa	Fatal scorpionic myocarditis: Interest of circulatory assistance (ECMO)
P 005		Abdeljelil	Farhati	Transcatheter closure of large secundum atrial septal defect in older adult with global heart failure: a high risk procedure
P 006		Farhati	Abdeljelil	Pitfalls of percutaneous reinterventions on previously stented osital left main coronary artery
P 007		Jamel	Ahmed	Non compaction of the left ventricle: about ten cases and review of the literature
P 008		Jamel	Ahmed	Acute coronary syndrome in Behcet's disease caused by a coronary artery aneurysm and thrombosis
P 009		Ait Mokhtar	Omar	Reccurent in drug eluting stent restenosis
P 010		Abdelaziz	Jaouadi	Renal fibromuscular dysplasia with severe hypertension cured by balloon angioplasty: When? And what after?
P 011		Abdelaziz	Jaouadi	Catheter induced left main coronary artery dissection: Is there any more serious complication?
P 012		Abdelaziz	Jaouadi	Percutaneous coronary intervention in infants: About three cases with a review of the literature
P 014		Abdejalil	Farhati	Longitudinal compression of a drug-eluting stent by coronary calcification
P 015		Abdeljelil	Farhati	Percutaneous closure of an aortic prosthetic paravalvular leak
P 016		Abdeljelil	Farhati	Pitfalls of percutaneous reinterventions on previously stented osital left main coronary artery
P 017		Abdeljelil	Farhati	Successful percutaneous retrieval of an AMPLATZER DUCT OCCLUDER II after migration into segmental pulmonary artery branch
P 018		Abdallah	Marwa	Atypical presentation of acute coronary syndrome during Pregnancy
P 019		Abdallah	Marwa	Hypercholesterolemia in children: premature cardiovascular risk Left Main Coronary Angioplasty in a 10-Year-Old Boy With Familial Hypercholesterolemia
P 020		Abdallah	Marwa	Management of acute Cardiac failure in Pregnancy
P 021		Abdallah	Marwa	Rare Présentation: Takayasu disease in association with tuberculosis
P 022		Abdallah	Marwa	Rheumatic heart diseases in pregnancies with adverse maternal and foetal outcomes

Poster No.	Session	Surname	Name	Title
P 023	<b>Session 3 + 4: 18H00 – 18H30 Thursday 18 October 2018</b>	Amani	Farah	High blood pressure revealing a cardiac tumor!
P 024		Amani	Farah	Massive pulmonary embolism with ST an unusual segment elevation
P 025		Amani	Farah	Mid-ventricular hypertrophic Obstructive cardiomyopathy with apical aneurysm
P 026		Amel	Amrouche	A challenging Trifurcation PCI
P 027		Asma	Neily	Stenting the Fontan pathway for obstructed extracardiac conduits. The study two cases
P 028		Ayed	Amel	Trends in mortality following ischemic heart disease among dialysis patients over 4 years
P 029		Ayed	Amel	Prevalence and prognostic significance of diabetes in patients undergoing chronic hemodialysis presenting with ischemic heart disease
P 030		Abdelmalek	Azzouz	An unforgettable bifurcation, unforgettable patient
P 031		Bassem	Rekik	A case of coronary perforation successfully treated
P 032		Ayed	Amel	Predicting Factors for coronary lesions in chronic hemodialysis patients: does it exist?
P 033		Ayed	Amel	When nature makes the right choice!
P 034		Belfekih	Ayoub	On the silk road to STEMI
P 035		Belfekih	Ayoub	The revenant
P 036		Karima	Taamallah	Early detection of a left ventricular diastolic dysfunction in hypertensive patients
P 037		Karima	Taamallah	Assessment of the left ventricular systolic function in hypertensive patients: the role of 2D longitudinal strain
P 038		Marwa	Chebbi	Myocardial infraction caused by ostial right coronary artery thrombus in a non atheromatic aortic wall
P 039		Marwa	Chebbi	A rare Pulmonary Hilar Rhabdomyosarcoma metastasized to the left side of the Heart
P 040		Marwa	Chebbi	Is there differences in prognosis between ischemic and non-ischemic cardiomyopathy? A Tunisian cohort
P 041		Chedi	Yousfi	Risk Score in Predicting Failure or Success for Antegrade Approach to Percutaneous Coronary Intervention of Chronic Total Occlusion: Antegrade CTO Score
P 042		Chedi	Yousfi	Predictive Value of SYNTAX Score in Risk Stratification of Patients Undergoing Unprotected Left Main Coronary Artery Angioplasty
P 043	Marwa	Chebbi	Percutaneous aortic valve implantation was the perfect therapeutic option for this patient with bicuspid aortic valve: A case report	
P 044	Marwa	Chebbi	Valvular performance and aortic regurgitation following transcatheter aortic valve replacement using balloon expandable valve versus self expandable valve for severe aortic stenosis	
P 045	Sarra	Chenik	Incidence and predictors of conduction disturbances following Transcatheter Aortic Valve Implantation	

Poster No.	Session	Surname	Name	Title
P 047	<b>Session 5 + 6: 10H30 – 11H00 Friday 19 October 2018</b>	Dalila	Djermane	Inhospital prognosis of patients presenting acute heart failure: preliminar results on an algerian population
P 048		Safa	Dardouri	Spontaneous Coronary Artery Dissection: a rare cause of acute coronary syndrome A case report
P 049		Hichem	Denguir	Non-ST elevation acute coronary syndromes in elderly patients: the GRACE risk score and one-year mortality in a Tunisian center
P 050		Drissa	Meriem	coarctation of the aorta in neonate: is it similar to adult form?
P 051		Drissa	Meriem	Predictors of cardiac involvement in systemic lupus erythemateux
P 052		Meriem	Drissa	Non ST elevation acute coronary syndrome: a comparative study men versus women: A report of a tunisian hospital experience
P 053		Sofiene	Haboubi	Tako-Tsubo cardiomyopathy presenting with multiple complications: A case report
P 054		Loua	Hattach	Patent ductus arteriosus closure using an Amplatzer ventricular septal defect closure device in Adulthood
P 055		Haythem	Raddaoui	Clinical and echocardiographic characteristics of patients with congenital pulmonary valve stenosis
P 056		Haythem	Raddaoui	Immediate results of balloon pulmonary valvuloplasty of congenital valvar pulmonary stenosis: report of 56 cases
P 057		Raddaoui	Haythem	Progression of intracoronary hematoma assessed by IVUS: A Case Report
P 058		Raddaoui	Haythem	Is there an improvement in outcomes with IVUS-guided PCI in the unprotected left main after 12months?
P 059		Raddaoui	Haythem	One-year outcomes of unprotected left main PCI
P 060		Hela	Sarray	Left atrial speckle tracking analysis in patients with mitral stenosis
P 061		Sarray	Hela	Giant Left Atrial Myxoma With Mitral Valve Obstruction: A Case Report
P 062		Sarray	Hela	Myocardial Infarction with Non-Obstructed Coronary Arteries: MINOCA
P 063		Housseem	Thabet	Therapeutic particularities and evolution of coronary fistulas, about a series of cases
P 064		Karray	Sayda	Occlusive and aneurysmal iliac arteries lesions in Behcet's disease
P 065		Khalifa	Roueida	A predictive factors of smoking cessation after an acute coronary syndrome: A prospective study and six months of follow-up
P 066		Khalifa	Roueida	Dual atrioventricular node conduction during sinus rhythm
P 067	Khalifa	Roueida	Predominant left ventricular involvement in arrhythmogenic right ventricular dysplasia	
P 068	Khalifa	Roueida	Securesens could-it be a supraventricular tachycardia discrimination algorithm?	

Poster No.	Session	Surname	Name	Title
P 069	<b>Session 7 + 8: 15H30 – 16H00 Friday 19 October 2018</b>	Kammoun	Yassmine	Rare combination of biventricular non-compaction cardiomyopathy and a circumflex coronary artery-to-pulmonary artery fistula
P 070		Kammoun	Yassmine	Interest of Doppler ultrasound of the supra-aortic trunks in the preoperative assessment of a valve replacement
P 071		Kammoun	Yassmine	Study of aortic compliance in coronary patients based on Doppler ultrasound
P 072		Houaida	Mahfoudhi	Value of natriuretic peptides to predict the clinical scenario of acute heart failure in emergency department
P 073		Megherbi	Nazim	Acute stent thrombosis, the question remains!
P 074		Megherbi	Nazim	Acute thrombosis of the left main
P 075		Megherbi	Nazim	Thrombotic embolization during primary PCI, could it have been avoided?
P 076		Drissa	Meriem	Primary cardiac tumor in paediatric population: echocardiographic aspect and outcome
P 077		Drissa	Meriem	Profile and outcome of staphylococcus aureus infective endocarditis (SAIE) (about a tunisian experience)
P 078		Drissa	Meriem	Impact of heart failure etiology on prognosis: about a comparative study
P 079		Mohamed	Meghnem	Coronary Subclavian Steal Syndrome; when the CABG worsens myocardial ischemia
P 080		Mohamed	Touati	State of the art in percutaneous pulmonary valve implantation: the Algerian experience
P 081		Ben Kilani	Mouna	Large left atrial myxoma causing multiple cerebral infarcts
P 082		Ben Kilani	Mouna	Ruptured mycotic superior mesenteric Artery Aneurysms and infective endocarditis
P 083		Ben Kilani	Mouna	Acute inferior myocardial infarction caused by left anterior descending artery occlusion
P 084		Ben Kilani	Mouna	Prevalence and characteristics of coronary artery anomalies in an adult population in Tunisia
P 085		Ben Kilani	Mouna	Stent thrombosis after primary angioplasty
P 086		Ben Kilani	Mouna	Anemia in patients with Acute Coronary Syndrome: Epidemiological profile and impact on the prognosis
P 087		Ben Kilani	Mouna	Clinical and angiographic features of 80 "Real-World" patients with long coronary lesions receiving at least 30 mm stenting

Poster No.	Session	Surname	Name	Title
P 088	<b>Session 9 + 10: 10H00 – 10H30 Saturday 20 October 2018</b>	Nadia	Bouzidi	LDL-c/HDL-c ratio is better than LDL-c levels in predicting coronary artery disease in patients without dyslipidemia
P 089		Nadia	Bouzidi	Lipoproteins ratios in coronary artery disease patients undergoing coronary angiography
P 090		Aymen	Najjar	Management of STEMI during weekends
P 091		Aymen	Najjar	In-hospital impact of atrial fibrillation in patients with ST segment elevation myocardial infarction
P 092		Ouday	Ben Abdeljelil	Knowledge and skills of the patients towards their oral anticoagulant treatment by antivitamin K in Tunisia
P 093		Ouday	Ben Abdeljelil	Therapeutic evaluation of an educational program for patient under antivitamin K
P 094		Oueis	Labidi	Management of cardiogenic shock in Tunisia
P 095		Oueis	Labidi	Predictive factors of cardiogenic shock in acute myocardial infarction
P 096		Oueis	Labidi	Predictors of in-hospital mortality among patients with cardiogenic shock complicating acute myocardial infarction
P 097		Ben Rejeb	Oussama	Acute myocardial infarction in elderly patients treated with an interventional strategy: long term outcomes and age related differences
P 098		Oussama	Ben Rejeb	2 years outcomes of PCI in acute STEMI patients in a single university hospital centre in Tunisia
P 099		Oussama	Ben Rejeb	Acute myocardial infarction in elderly patients treated with an interventional strategy: long term outcomes and age related differences.
P 100		Letaief	Rim	Percutaneous coronary intervention and profile of chronic total occlusion patients
P 101		Letaief	Rim	Predictive factors of percutaneous coronary intervention success in the chronic total occlusion
P 102		Letaief	Rim	Percutaneous coronary intervention for chronic total occlusion: Is it safe?
P 103		Saida	Bouceffa	Materno-fetal become after percutaneous mitral commissurotomy during pregnancy: results after 20 years
P 104		Salem	Mohamed Amine	Uncommon cause of coronary stenosis
P 105		Selim	Boudiche	Stenting from Left Main to the Left Circumflex coronary artery outcome
P 106		Zied	Ben Ameur	Therapeutic inertia in the management of hypertension in Tunisia in tertiary health care center
P 107		Ben Ali	Zine Elabidine	Iatrogenic left main dissection during diagnostic coronary catheterization: How to treat?

## Presenting Author

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## Article

### English Title

Coronary Subclavian Steal Syndrome; when the CABG worsens myocardial ischemia

### Category

Coronary Intervention

### English Abstract

Coronary subclavian steal syndrome is a rare complication of coronary artery bypass grafting surgery (CABG) when a left internal mammary artery (LIMA) graft is utilized. This syndrome is characterized by retrograde flow from the LIMA to the left subclavian artery (SA) when a proximal left SA stenosis is present. We describe a unique case of a middle age male who underwent CABG 2 years ago after anterior NSTMI for which the coronarography has objectified a tight distal trifurcate stenosis of the left main which justified surgical revascularization by CABG (LIMA-left anterior artery-bissectrice artery). Paradoxically, the symptoms persisted after the surgery or even slightly increased despite optimization of the medical treatment.

A control coronarography made objectified a native coronary network without modification with permeability of the arterial graft. In order to relieve the patient, the decision of left main angioplasty was made (Left main-LAD), but mais juste après la procédure, le malade a commencer à présenter un angor au moindre effort a complication of angioplasty was suspected motivating to control the patient by coronarography wich objectified retrograde flow from the coronary artery to the LIMA ostium.

Stenosis of the subclavian artery was suspected and confirmed by angiography. The patient underwent revascularisation of the subclavian artery by percutaneous stenting with clear regression of symptoms.

### Take Home Message

To detect patients who are eligible for surgical revascularization, particularly during echography of the supra-aortic trunks.

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## Article

### English Title

Trends in Mortality Following Ischemic Heart Disease Among Dialysis Patients Over 4 Years

### Category

Coronary Intervention

### English Abstract

**Introduction:** Patients with chronic kidney disease (CKD) on chronic hemodialysis (CHD) carry a considerable burden of cardiovascular disease (CVD). Annual mortality from CVD among CHD patients is substantially higher relative to patients with normal renal function. They are responsible for about 50% of deaths and 30% of hospitalizations.

**Purpose:** To determine the short- and long-term survival of CHD patients with coronary artery disease as well as the predictors of mortality from CVD.

**Patients & Methods:** This is a retrospective study conducted in the monastir cardiology department between January 2014 and March 2018. 71 CHD patients undergoing coronary exploration were included. Baseline data and clinical events were fully documented during the follow-up period for all these patients.

**Results:** In this study, 71 CHD patients (1.1%) underwent coronary exploration with a mean age of  $58.9 \pm 10.96$  years (33-80) and a male predominance (69%). They had a high comorbidity with a high prevalence of hypertension (81.7%), diabetes mellitus (49.3%) and anemia (77.3%). Severe coronary disease was objected in 54 patients (76%). No cases of intra-hospital death have been detected. However, a total of 9 long-term deaths (12.7%) were collected for all causes combined and only 2 cases died of cardiac cause. Moreover, there was no significant difference in the date of occurrence of death over 4 years of follow-up (an average of 2 deaths per year). The results of the univariate analysis for all-cause mortality did not reveal any predictive factors for increased morbidity and mortality in this population significantly apart from diabetes and severity of coronary lesions. Kaplan-Meier analysis showed that severe coronary status was associated with a non significant increase in mortality (log-rank test: 0.08). The cox model clearly elucidated this result after adjusting for age, comorbidity, and antiquity of hemodialysis. As for the charlson score (comorbidity score predictive survival) applied in our study, the percentage of survival joined the long-term outcome ( $p < 0.001$ ).

**Conclusion:** Our study has shown that the massive burden of cardiovascular disease carried by CHD patients alone does not explain their lamentable long-term survival. Nevertheless, there is a positive correlation between severe coronary disease and the high morbidity and mortality of this population. Hence the need for good care.

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## Article

### English Title

Spontaneous Coronary Artery Dissection: a rare cause of acute coronary syndrome – A case report

### Category

Coronary Intervention

### English Abstract

**Aim:** Suspect the diagnosis of spontaneous coronary artery dissection in case of acute chest pain in a young woman, explain its physiopathology, diagnostic means, therapeutic modalities and the means of surveillance.

**Background:** Spontaneous coronary artery dissection (SCAD) is among the rare but sometimes fatal causes of acute coronary syndrome especially in middle-aged women.

**Patient concerns:** We report the case of a 36-year-old woman without cardiovascular risk factors or thromboembolism who consults for chest pain with acute anterolateral myocardial infarction.

**Diagnoses:** Coronary angiography has showed a spiral dissection line in the left common trunk from its ostium to its bifurcation and a circumflex artery occluded from its ostium.

**Interventions:** patient was treated by optimal medical treatment and a close monitoring by a multislice computed tomography (MSCT) and transthoracic echocardiography has been planned.

A second coronarography was made in front of recurrence of chest pain having concluded the disappearance of the dissection line and a re-permeabilization of the circumflex artery.

**Lessons:** SCAD should always be suspected in young women with chest pain and myocardial infraction in electrocardiogram. The diagnosis is often confirmed by coronary angiography but new and more developed diagnostic methods appear such as intravascular imaging modalities (IVUS and OCT). Three therapeutic modalities are available: medical therapy, percutaneous coronary artery intervention, and surgery.

**Abbreviations:** SCAD = Spontaneous coronary artery dissection, IVUS = intravascular ultrasound, OCT= Optical coherence tomography, MSCT= multislice computed tomography.

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## Article

### English Title

Value of natriuretic peptides to predict the clinical scenario of acute heart failure in emergency department

### Category

Other

### English Abstract

**Introduction:** Heart failure is a common health problem with poor prognosis. The gold standard for diagnosis is echocardiography but it is not always available, especially in emergency conditions. NT-pro-brain natriuretic peptide (NT-proBNP) is a novel indicator for the diagnosis of heart failure and is being used in routine tests in emergency department (ED).

The objective of our study was to investigate the relationship between NT pro BNP and AHF syndromes in the ED.

**Methods:** Descriptive prospective study over eight months. Were included 107 patients who presented to the ED with dyspnea and in whom the diagnosis of AHF was made. All patients had aNTproBNP laboratory test and underwent echocardiography.

**Results:** The mean age of the patients (70 males, 37 female) is  $65 \pm 12$  years. A clinical scenario CS1 was noted in 28% of cases, CS2 in 36% of cases, CS4 in 16% of cases, CS3 in 12% of cases and CS5 in 8% of cases. Thirty percent of patients had preserved left ventricular ejection fraction (LVEF) with diastolic dysfunction and 70% had a reduced LVEF. Elevated LV filling pressures were found in 95% of patients. Disorders of wall motion in 14% of cases and isolated right heart failure in 12% of cases. The median NTproBNP level was higher when LVEF was preserved: 4073 [410 – 25 550] pg / ml vs 2025 [409 – 25 200] pg / ml ( $p = 0,043$ ). The NTproBNP was a good predictor of the clinical scenario CS1 with a cut-off at 5565 pg / ml. Though, the potential clinical applications of B-type natriuretic peptide in AHFS should be more studied.

**Conclusion:** The mean NTproBNP was higher when LVEF was preserved. The NTproBNP could predict the clinical scenario CS1 from a threshold of 5565 pg/ml.

Peptide measurements provide information complementary or incremental to echocardiography for assessment of cardiac function, clinical status, and outcome. Though, the potential clinical applications of B-type natriuretic peptide in AHFS should be more studied.

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## Article

### English Title

Atypical presentation of acute coronary syndrome during Pregnancy

### Category

Case Report

### English Abstract

**Introduction:** The occurrence of an acute myocardial infarction during pregnancy is estimated at about 6 per 100,000 births. Although it is a rare phenomenon, it is associated with high maternal-fetal morbidity and mortality. There are several factors that contribute to the three to four times higher incidence of AMI during pregnancy, namely: increased volemia, increased cardiac output, increased heart rate and decreased oxygen supply to the myocardium caused by anemia, and physiological diastolic hypotension.

We describe a case of acute coronary syndrome during the third trimester of pregnancy.

**Case:** A 33-year-old pregnant woman presented to the emergency department with a 1 h history of sudden onset severe central chest pain. She had no known history of diabetes, dyslipidemia, or hypertension. The pain radiated through to the back and arm. She also complained of dyspnea, nausea and vomiting. Clinically there was no evidence of deep vein thrombosis, pulmonary embolism, or pericarditis. On physical examination she was hemodynamically stable, with a heart rate of 69 and regular, equal blood pressures in both arms of 95/65 mmHg, and an oxygen saturation of 97% on room air. There were no signs of congestive heart failure. Obstetric assessment including ultrasonography determined a viable intrauterine pregnancy with normal fetal heart sounds. Initial ECG showed ST elevation in lead DII, DIII, AVF. A diagnosis of inferior myocardial infarction was made, Transthoracic echocardiogram showed a normal left ventricular function, mitral stenosis (MVA: 1.6 cm<sup>2</sup>) and no visible thrombus. The patient was treated conservatively with intravenous unfractionated heparin, aspirin, clopidogrel, and spironolactone. With the treatment, the patient experienced symptomatic relief and hemodynamic stability.

She was discharged home on day five after admission with clopidogrel, aspirin, beta-blocker and oral anticoagulation with close outpatient follow-up.

**Conclusion:** ACS in pre- and post-partum women is a rare but dreadful situation. The coronary artery embolism is an uncommon cause of myocardial Infarction in patients with valvular heart disease. In a stable patient, medical management may be attempted. Patients with ongoing symptoms, hemodynamic compromise may benefit from embolus extraction. Treatment options for this uncommon complication must be considered on an individual case basis.

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## Article

### English Title

When nature makes the right choice!

### Category

Case report

### English Abstract

**Introduction:** Arterio-venous fistula (AVF) is the standard gold for hemodialysis and the preferred vascular access. But, its creation can provoke a sequence of events that significantly affects cardio-vascular hemodynamic. Subsequently, this can contribute to excess cardio-vascular morbidity and reduce life expectancy for dialysis patients.

**Observation:** We present a 43-year-old man with end-stage renal disease from malformative nephropathy. He had been treated by hemodialysis since december 2007 through a left arm brachiocephalic AVF created in 2007. He was addressed in 2013 from his hemodialysis unit for per dialytic hypotension and breath shortness during the past few weeks. There was no cardiovascular disease history. Echocardiography revealed a severe dilated left ventricle with impaired ejection fraction (FEVG) of 43 % without significant valvulopathies. Coronarography was performed with normal income. The patient was diagnosed with non ischemic dilated cardiomyopathy. AVF doppler echo performed in 2016 revealed AVF with hyper flow but not too much significant. Other fistula were searched but in vain. To manage heart failure, the patient was treated by beta blockers and ACE inhibitors with life style changes and regular monitoring. The procedure to close the AVF with creation of other vascular access was started. IN the mean time, the patient reported a progressive improvement of his basic dyspnea and symptoms. Control Echocardiography performed in 2017 showed clear improvement with DTD 64 mm, DTS 46 mm and FEVG of 57 %. This was concomitant with a decrease in AVF flow related to perianastomotic stenosis. Stenosis as a complication of AVF was a solution to this hyper flow and the key to unlock heart congestive failure. What a miraculous reverse remodeling!

**Conclusion:** AVF are without a doubt life-saving not withstanding the potential danger of attaining excessive blood flow rates wich may cause high-output heart failure. In our case, the stenosis of the AVF provided symptomatic relief with a decrease in cardiac output.

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## Article

### English Title

Management of acute Cardiac failure in Pregnancy

### Category

Other

### English Abstract

**Introduction:** Heart disease is a common cause of morbidity and mortality during pregnancy. Symptoms and signs of heart failure in a pregnant woman are an indication for urgent assessment to establish a diagnosis and appropriate management.

We describe a rare case of a young woman at the beginning of pregnancy, who presented with dyspnea and chest pain. she suffered hypotension and diuresis reduction, with no significant electrocardiographic anomalies She improved after intravenous injection of amine (continuous infusion of dobutamine and then levosimendan. After intubation, Transthoracic echocardiography showed left ventricle dysfunction at 25 %; all mid-apical segments of a not dilated LV were akinetic.

During the following days the patient showed a progress and on the sixth day she breathed spontaneously after extubation. We performed a cardiac magnetic resonance imaging examination. Cine view showed midventricular akinesis. the diagnosos of Tako-Tsubo syndrome was made. Echocardiogram performed 7 days later revealed a normal LV function with no regional wall motion. Unfortunately, the woman suffered a spontaneous abortion 10 days after the disease onset

**Case 2:** A 21-year old female, at 18 weeks of gestation, who presented for shortness of breath the patient had worsened tachycardia with heart rate of 140-150 bpm, EKG indicating incomplete left bundle branch block, pulmonary hypertension on echocardiogram and low normal ejection fraction at 30%. Elevated troponins and brain natriuretic peptide were also found. After 20 days of treatment the patient was discharged home in good condition and termination of the pregnancy (TOP) was done. At 12 week followup cardiac function was 55 % with resolved pulmonary hypertension. Cardiac MRI diagnosed an acute myocarditis.

**Conclusion:** Acute cardiac failure is an indicator of significant morbidity and may lead to mortality in pregnant women. It is paramount to identify the at-risk patient, recognise signs of critical illness and manage these women with a skilled multidisciplinary team. Appropriate long-term follow-up is necessary to reduce the chance of further complications in later life. Finally, the use of transthoracic echocardiography should be encouraged, both as an educational tool and to aid diagnosis and management

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## Article

### English Title

Therapeutic particularities and evolution of coronary fistulas, about a series of cases

### Category

Other

### English Abstract

**Introduction:** Coronary fistula is a rare congenital malformation. The diagnosis of certainty is confirmed by coronary angiography. Spontaneous closure is possible. The standard treatment for these fistulas is surgery, but percutaneous occlusion currently seems a good therapeutic alternative. In the most disabling forms where the shunt is important, some complications may occur and increased morbidity and mortality.

**Aim:** The aim of this study is to describe the evolution as well as the therapeutic approach of coronary fistulas.

**Patients and Methods:** This is a retrospective study, conducted in the cardiology department of Sahloul Hospital in Sousse between 1995 and 2015, 25 patients were collected. Included in the study were all patients with congenital coronary fistulas. The different therapeutic modalities chosen and the clinical evolution were resumed.

**Results:** The average age of the study population was 55.8 years. There was a clear male predominance, 76% were men. The mean age of discovery of coronary fistula was 55.8 years. The finding was fortuitous in 92% of cases. Stress angina was a circumstance of discovery of coronary fistula in two patients. Coronary fistula was respected in 23 patients because the coronary fistulas in these cases were of small caliber and asymptomatic. A percutaneous closure of the coronary fistula was performed in two patients: a right coronary fistula-right atrium and an LAD- right ventricular arterial fistula closed by an arterial duct Amplatzer number 4-6 in both cases. Both patients had a large coronary fistula with symptomatic angina. The surgical closure was not performed in any case in our series. The 23 patients who had no treatment for coronary fistula did not develop coronary fistula symptoms or complications. The echocardiography control was performed in 14 patients; it did not show any change in the size of the heart chambers or other abnormalities compared to the initial echocardiograms. Coronary angiography was performed in 4 patients, motivated by the appearance of chest pain in all 4 cases. The total spontaneous regression of coronary fistula of small right coronary-right ventricle size was noted in a 42-year-old patient. The other three patients had the same angiographic appearance.

**Conclusion:** Uncomplicated coronary fistulas are of good prognosis and they close spontaneously in the majority of cases; Surgery still occupies its place, but percutaneous closure is also a therapeutic alternative that has been proven effective.

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## Article

### English Title

Rheumatic heart diseases in pregnancies with adverse maternal and foetal outcomes

### Category

Other

### English Abstract

**Introduction:** In low income countries Rheumatic Heart Disease (RHD) accounts for approximately 90% of all cardiovascular disease among pregnant women. For some of these women an initial diagnosis is made antenatal or postpartum, as they fail to tolerate the impact of the physiological changes of pregnancy on their damaged heart valves resulting in clinical decompensation. Some medical therapies may be teratogenic, while surgical management in pregnancy may increase the risk of pregnancy loss.

#### Patients and Observations:

**Case 1:** Mrs. B is a 21 years old who presented at 18 weeks gestation. She was symptomatic (NYHA class III). The echocardiogram showed mitral valve area of 1.8 cm<sup>2</sup>, severe mitral regurgitation, EF of 49.3% and pulmonary hypertension. The couple was informed and termination of the pregnancy (TOP) was done. There was no excessive bleeding and she was discharged in a stable condition and planned for valve replacement.

**Case 2:** We present a case report of a 24 year old woman at 32 weeks gestation age, presenting difficulty in breathing, fatigability and lower limb swelling. Echo revealed severe aortic regurgitation where the pressure half-time was 155ms, with the regurgitant orifice area of 0.4cm<sup>2</sup> and preserved left ventricular systolic function. Obstetric USS revealed a viable singleton pregnancy at 32 weeks, cephalic presentation. Our patient was managed by medical treatment but with no signs of improvement, so we continued monitoring her with the obstetrician and she was planned for valve replacement. Currently she has been discharged after aortic valve replacement and she was planned for cesarian at 37 weeks.

**Case 3:** A 41-year-old pregnant woman, at the 28th gestational week with a few days history of asthenia, dyspnea. HR 150 bpm with arrhythmia. The electrocardiogram revealed a severe atrial fibrillation. The echocardiography showed a mitral stenosis and a pulmonary hypertension. The patient was treated for respiratory distress syndrome prophylaxis, and Low Molecular Weight Heparin prophylaxis. At the 29th gestational week, with persistent severe symptoms that cannot be controlled by medical therapy this patient have been successfully treated by balloon valvuloplasty. After the 38 gestational week the patient was discharged with a baby girl in good health conditions.

**Conclusion:** Women with RHD of reproductive age must receive early preconception evaluation and advice regarding the potential impact of pregnancy on their function

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## Article

### English Title

Therapeutic inertia in the management of hypertension in Tunisia in tertiary health care center

### Category

Other

### English Abstract

**Introduction:** The percentage of patients treated for hypertension with a well-controlled blood pressure (< 140/90 mmHg) remains disappointingly low, in general way below 50 %, despite all national and international recommendations. Among the causes explaining this insufficient control, therapeutic inertia has been identified as an important determinant, which unfortunately did not improve over the last 10–20 years.

**Objectives:** The aim of the research was to analyze factors affecting the low effectiveness of the hypertension therapy among tertiary health care patients in Tunisia.

**Methods:** This is a cross-sectional observational study. We included the patients who were presented to the consultation of cardiology and having a hypertension during the study period (March 01, 2017 to May 31, 2017).

**Results:** Thirty-eight patients on average per day have visited our outpatient unit. The prevalence of hypertension was 26%, or about 10 hypertensive patients per day of consultation. A total of 199 patients have been included in our study. The median age of the patients was 62.7 ± 10.4 years with a sex-ratio man/woman of 0.62. Eighty-nine per cent had a high cardiovascular risk in the month according to Score classification. The prevalence of therapeutic inertia in our study was 17.3%. There were six main reasons reported to justify maintaining an unchanged drug treatment despite higher than desired BP values. These were: awaiting full drug effect or time too short; target almost reached or clear improvement; poor compliance; reduction of other risk factors; side effects; and good self-measurements or white-coat hypertension objectified and finally an unjustified therapeutic attitude.

**Conclusion:** Therapeutic inertia is part of the decision-making algorithm of the practitioner in his management of hypertension in a tertiary health care center. This decision is generally well-argued and ambulatory blood pressure monitoring is usually requested at the next appointment at the outpatient clinic.

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## Article

### English Title

Rare Presentation: Takayasu disease in association with tuberculosis

### Category

Case report

### English Abstract

**Introduction:** Takayasu disease is a large vessels vasculitis involving the aorta and its main branches. TA is associated with a low incidence of coronary arterial involvement (9–11% of cases). The arterial revascularization should also be considered if necessary. A possible relationship between Takayasu's arteritis and Tuberculosis has been proposed.

**Case:** A 37-year-old female patient presented with recurrent chest pain. Furthermore, her brother treated last year from tuberculosis. Clinical examination revealed a small lymph node in the right axillary area and a significant asymmetry blood pressure between right and left limb. All pulses were absent with soufflé on left subclaviar artery and left common carotid arteries. Cardiac auscultation was normal. Laboratory tests showed a rise of troponin and anaemia with haemoglobin 8 g/dL and a normocytic, normochromic picture. The erythrocyte sedimentation rate was high. C reactive protein was also high. The electrocardiogram showed sinus tachycardia at 110 bpm and diffuse repolarization abnormalities, ST-segment depression of 2–5 mm in anterior, septal, apical and lateral derivations. An echocardiogram showed left systolic dysfunction, with a left ejection fraction of 45 %. The diagnosis of non ST elevation myocardial infarction was made. Coronary angiography revealed a severe stenosis (70%) of the LMCA ostium and also of the right coronary. Arch vessel angiography revealed total occlusion of the left common carotid artery and left subclavian artery at their origin. An abdominal aortogram demonstrated diffuse disease of the aorta near the origin of renal arteries and bilateral renal artery stenosis. This case has been discussed in a meeting between cardiologists and internists and on the basis of the clinical and imaging findings, TA has been retained on ACR criteria. Corticosteroids was added. The patient was given a loading dose of Aspirin, Clopidogrel, Enoxaparine. Percutaneous coronary angioplasty of the left main coronary artery was performed with implantation of a drug-eluting stent. The patient was discharged and continued medical treatment, We started standard also anti-tubercular therapy after a positive skin TB test and QuantiFERON-TB. The follow up is about 15 months until now, no event was reported.

**Conclusion:** There is no consensus in coronary management in TA. Generally, it requires revascularization procedures with medical treatment. Remission may occur in 40-60% of patients with TA

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## Article

### English Title

Predicting Factors for coronary lesions in chronic hemodialysis patients: does it exist?

### Category

Coronary Intervention

### English Abstract

**Introduction:** Among patients with advanced chronic kidney disease, cardiovascular disease is the leading cause of death, 15-30 times higher than the age-adjusted cardiovascular mortality rate in the general population. However, since coronary lesions are sometimes precocious severe and masked, predicting significant lesions remains an issue in daily practice.

**Methods:** The study was carried out on a retrospective registry including 6544 patients undergoing percutaneous coronary intervention in the Cardiology Department of Fattouma Bourguiba University Hospital (Monastir, Tunisia) between January 2014 and mars 2018. The clinico-biological and coronary features of the chronic hemodialysis (CHD) patients were collected. Coronary patients known before starting CHD were excluded (5 cases).

**Results:** Out of the overall population, we indentified 66 CHD patients with no cardiac history (1%). The average age was  $58.35 \pm 11$  years with a male predominance (68.2%). In univariate analysis, the predictor variables of severe coronary lesions were classical risk factors (age ( $p = 0.02$ ), diabetes mellitus ( $p = 0.0001$ ), hypertension ( $p = 0.06$ ), dyslipidemia ( $p = 0.03$ ), tobacco (0.01) and other specific factors (the antiquity of hemodialysis ( $p = 0.07$ ), troponin's rate ( $p = 0.004$ ), anemia ( $p = 0.0001$ ), calcification ( $p = 0.01$ )). Otherwise, sex, inflammatory status and left ventricular hypertrophy did not correlate with the severity of coronary lesions ( $p = 0.28$ ). In multivariate analysis, only diabetes (OR: 147,  $p = 0.0001$ ) and tobacco (OR = 32,  $p = 0.0068$ ) had a positive predictive value. Nevertheless, no significant relationship was found between the different clinico-biological parameters and the truncular status.

**Conclusion:** Strategies designed to identify and prevent cardiovascular risk factors in CHD patients should take into account traditional factors (diabetes, tobacco) as well as specific factors of this group (anemia).

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## Article

### English Title

Myocardial Infarction with Non-Obstructed Coronary Arteries: MINOCA

### Category

Coronary Intervention

### English Abstract

**Background:** Acute coronary syndrome with positive troponin and angiographically healthy coronaries represent a rare entity. It poses etiological, prognostic and therapeutic problems, as well as the problem of the prevention of acute coronary syndrome in a non-atheromatous context.

This study aims to determine the epidemiological, clinical, etiological characteristics as well as the prognostic factors and the therapeutic modalities of acute coronary syndromes with positive troponins and angiographically healthy coronaries.

**Methods:** This retrospective study included 80 hospitalized patients in the cardiology department between January 2004 and July 2011. All these patients suffered from myocardial infarction with healthy coronaries. Short-term and long-term data was collected.

**Results:** The prevalence was 3.78%. The mean age was 50 years  $\pm$  14 with no predominance of sex. Tobacco was the most common risk factor (46%) followed by dyslipidemia (24%), familial coronary artery disease (21%), hypertension (18%), diabetes (15%) and obesity (15%). In women, menopause was the most common FRCV (56%). Persistent ST segment elevation was noted in 41% of the cases, the inferior territory was the mostly affected (42%). Coronary spasm was the most frequent cause in the acute myocardial infarction with ST-segment elevation ( $p = 0.05$ ) vs embolism in the other cases without ST-segment elevation ( $p = 0.01$ ). One case of antithrombin III deficiency, 3 cases of monoxide Carbone intoxication, 2 cases of vasculitis and 3 cases of endocrinopathy were reported. 26 cases were left with undetermined cause. Intra-hospital evolution was marked by angina recurrence and left ventricular failure. Long-term follow-up revealed angina recurrence especially in patients with spastic coronaries.

**Conclusion:** Myocardial infarction with non-obstructed coronary arteries MINOCA represent a rare entity with various etiologies that require appropriate management. Nevertheless, subclinical atherosclerosis remains strongly incriminated.

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## Article

### English Title

Uncommon cause of coronary stenosis

### Category

Coronary Intervention

### English Abstract

**Introduction:** We report the case of a left main coronary artery stenosis after mechanical valve mechanical aortic valve replacement.

**Methods: and Results:** We report the case of a 46 years old men admitted to our departement for the management of NSTEMI, in his past history he had mechanical aortic valve replacement 3 months ago.

We performed a coronary angiography which revealed a tight stenosis of the left main coronary artery, treated by angioplasty by drug eluting stent with good final result.

**Conclusion:** Stenosis of the left main coronary artery after mechanical aortic valve replacement is a complication to be feared and should be considered in front of a symptomatology evoking ischemic heart disease.

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## Article

### English Title

A challenging trifurcation PCI

### Category

Coronary Intervention

### English Abstract

**Context:** It's about a 65 years old women who complains about Angina class II. SPECT: large anterior ischemia, coronary angiography had found a trifurcation lesion of the left main artery.

**Method:** We discuss many options for the angioplasty: Trissing through 6Fr catheter? Switch to 7Fr through the radial access? Switch to 7Fr femoral access?

We finally choose a strategy of trissing through double catheters.

**Results:** A follow up of 4 years the patient is asymptatique and a coronary angiography had found good result.

**Conclusion:** use of double catheter in trifurcation lesion is a very interesting solution

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## Article

### English Title

Acute coronary syndrome in Behcet's disease caused by a coronary artery aneurysm and thrombosis

### Category

Case report

### English Abstract

Behcet's disease (BD) is a multisystemic vasculitis that can involve vessels of all sizes and is characterized by recurrent oral and genital ulcers with variable manifestations affecting the skin, eyes, and central nervous and musculoskeletal systems. Vascular involvement in BD is reported to be up to 40% in different series. The abdominal and thoracic aorta and pulmonary and femoral arteries are the most commonly involved arteries. However coronary arteries are rarely affected.

Herein, we present a 49-year-old man who was consulted with brutal severe chest pain. The patient was diagnosed with BD since 2000 and was treated by colchicine; he was in clinical remission for the last 15 years. At the first evaluation in the emergency department, the patient was breathless; an ECG was performed and showed a ST segment elevation in extended anterior territory. The diagnosis being STEMI complicated by left ventricle failure a coronarography was performed and showed an aneurysmal left descending anterior artery with a thrombotic occlusion at its proximal portion. Thromboaspiration was performed with injection of anti gp IIb IIIA intracoronary allowing to restore a TIMI flow 1 after placing two stents 4 \* 32 mm and 3 \* 20 mm on the LAD 1 and 2. But unfortunately the final result was a NO FLOW. In conclusion, coronary artery aneurysm is a rare and poor prognostic manifestation of BD. The treatment protocol for these aneurysms is not well clarified. IS therapies are definitely indicated, but the role of anticoagulants and invasive vascular interventions is controversial

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## Article

### English Title

Is there differences in prognosis between ischemic and non-ischemic cardiomyopathy? A Tunisian cohort

### Category

Other

### English Abstract

**Background:** Heart failure (HF) has a dark prognosis due to the high rate of mortality and re-hospitalization. The aim of our study was to compare the HF- ischemic versus non- ischemic in order to identify the prognosis impact of the etiology.

**Methods:** A prospective and comparative study including 150 patients, hospitalized for HF with ejection fraction (EF) <40% in cardiology department from 2013 to 2016, and subdivided into two groups. Group A ( $n = 65$ , ischemic HF) and group B ( $n = 85$ , non-ischemic HF).

**Results:** Group A patients were older and had significantly more frequent history of diabetes dyslipidemia and tobacco, renal failure (RF) and anemia were more common in group A. Atrial fibrillation (AF) and left bundle branch block were more often noted in the ischemic group. Both groups were comparable according to echocardiography parameters and prescription of beta-blockers (BB), Spironolactone and Angiotensin-converting enzyme inhibitors. However, more patients from group B underwent cardiac resynchronization and cardioverter-defibrillator implantation. Hospital mortality and 6 months mortality was 6% and 13% and was higher in group A.

Re-hospitalization and MACE rate was similar in both groups.

Ischemic etiology of HF was predictor of mortality with (HR = 1.9,  $p < 0.01$ ). In multivariate analysis, age (HR = 3,  $p < 0.01$ ), diabetes (HR = 3,  $p < 0.01$ ), pulmonary artery systolic pressure (PASP)  $\geq 45$  mm Hg (HR = 8,  $p < 0.01$ ) and the non prescription of BB were associated with a high risk of mortality. Independent prognosis factors comparable between both groups were: age, PAPS  $\geq 45$  mm Hg, dyspnea class IV of NYHA and the non-prescription of BB. However, RF was specific factors for group A and: EF < 30%, AF and TAPSE < 12mm were specific for group B.

**Conclusion:** The ischemic etiology seems to have a worse prognosis compared to other etiologies. In order to evaluate the global prognosis, distinguishing between ischemic and non-ischemic etiology remains mandatory in case of HF.

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## Article

### English Title

Prevalence and prognostic significance of diabetes on chronic hemodialysis patients presenting with ischemic heart disease

### Category

Coronary Intervention

### English Abstract

**Introduction:** Diabetes in recent years is climbing up as the number one cause of chronic kidney disease (CKD). Clinical statistics suggest that Diabetics on chronic hemodialysis (CHD) tend to have a poorer prognosis than others.

**Methods:** a retrospective study carried out in the Cardiology Department of Fattouma Bourguiba Hospital (Monastir, Tunisia) from 2014 to 2018 including 71 CHD patients.

**Results:** A total of 40 CHD diabetic patients were reported with a sex ratio 1.86 (men/women). Mean age was  $61.9 \pm 9.3$  years with average duration of HD 9.41 years. 54% of patients developed at least one macrovascular complication and 64% had diabetic retinopathy. Diabetes was a strong predictor of severe coronary disease (SCD) ( $p = 0.0001$ ). In multivariate analysis, it was associated with worse prognosis and SCD (OR:147,  $p = 0.0001$ ). The median survival adjusted to the diabetes group was  $27 \pm 15$  months. Kaplan–Meier analysis showed that diabetes was associated with a significant increase in mortality ( $p = 0.006$ ).

**Conclusion:** This study confirming the pejorative impact of diabetes, stresses the importance of organizing appropriate care upstream to prevent the development of cardiovascular morbidities.

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## Article

### English Title

Myocardial infraction caused by ostial right coronary artery thrombus in a non atheromatic aortic wall

### Category

Case report

### English Abstract

**Introduction:** Thrombi of the aorta are mostly linked to atheromatous plaques on the aortic wall of patients with classical risk factors for cardiovascular disease. The thrombus rarely appears on sound arteries and in this case is called "isolated".

**Case Presentation:** A 41-year-old smoking and previously healthy male was admitted to the emergency department due to persisting angina for 30 minutes associated to vomiting and sweating. The patient's blood pressure was 100/65 mmHg and his heart rate was 115 beats per minute. The electrocardiogram showed a normal sinus rhythm with ST segment elevation in leads II, III, aVF, V3, V4, V5 and V6; and reciprocal ST segment depression in leads I and aVL. Coronary angiography was immediately performed. The catheter is resting outside and the contrast injections showed a subtotal occlusion of the right coronary ostium with pressure damping during its engagement attempts, associated to normal angiographic morphology of both coronary arteries. Thoracic CT-scan helped to confirm the suspicion of ostial thrombosis as well as the presence of non-atheromatic aortic wall. The patient was accordingly scheduled for surgery. During the intervention, a thrombus of the ascending aorta was found with complete obstruction of the ostium of the right coronary artery and a partial ostial obstruction of the left coronary artery. The thrombus was totally removed and no significant lesions on the aortic wall were noticed. Histopathology confirmed the diagnosis of isolated thrombus of the ascending aorta. A severe dysfunction of the left and right ventricles occurred on the postoperative course and the patient died few days later.

**Conclusion:** The cases of aortic thrombosis could rarely be identified in the literature. The cases developing on a sound artery are difficult to quantify and the word "isolated" could be used sometimes by default. Therefore, and even if they are not sufficient for the diagnosis in most of the cases, the biological and morphological explorations have to be exhaustive, in order to identify the strategy of the follow up and the therapeutic decisions that should be taken especially regarding the long-term use of anticoagulants.

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## Article

### English Title

Hypercholesterolemia in children: premature cardiovascular risk Left Main Coronary Angioplasty in a 10-Year-Old Boy With Familial Hypercholesterolemia

### Category

Case report

### English Abstract

**Introduction:** Familial hypercholesterolemia is the most common genetic disorder in childhood, High levels of low-density lipoprotein cholesterol are present since the child's birth and this fact will suppose silent development of early atherosclerosis. In cases of homozygous, the coronary disease will appear before 20s. case: 10-year-old boy, born of consanguineous marriage, presented with a 4-month history of exertional angina, dyspnea and an episode of syncope. The parents had noticed xanthomas at his elbows 3 years prior. At that time, he was diagnosed to have homozygous FH and treated with diet. A family history of chest pain and sudden deaths was obtained. his complaints were ignored by his parents, until he had chest pain, palpitations and syncope, at that time the patient consulted. On examination his blood pressure was 100/50 mmHg. he had xanthomas over elbows. Cardiovascular system examination revealed no signs of heart failure. The electrocardiogram revealed sinus rhythm with an elevation of ST segment in lead avR with ST segment depression in anterior leads.

Laboratory examination revealed an elevated cardiac markers. The lipid profile revealed LDL of 23 mmol/L and triglyceride of 10 mmol/. The echocardiography revealed normal valves and normal left ventricular function (ejection fraction 60%) with anterolateral hypokinesia. In view of her symptoms and abnormal lipid profile a diagnosis of familial hypercholesterolemia with premature atherosclerotic CAD was made. Medical management with statins, beta blocker and dual antiplatelets (aspirin 75 mg and clopidogrel 75 mg) was initiated. A coronary angiography revealed a LMCA 70% lesion and a stenosis of the right coronary artery Coronary revascularization was deemed imperative for this highly symptomatic child. with critical LMCA disease. Considering her age and suitable anatomy of LMCA lesion, angioplasty with stenting of LMCA was selected. The patient tolerated the procedure well, experiencing only mild chest pain. The final angiogram showed satisfactory result, with a residual stenosis of 20–30%, no distal dissection, and TIMI 3 flow. The patient had an uneventful hospital stay. he was discharged with dual antiplatelet therapy, statins, nitrates, and beta blocker.

**Conclusion:** In the homozygous form, the risk of premature cardiovascular complications requires early detection of a mutant gene, particularly in people with a family history of heart failure at an early age.

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## Article

### English Title

A rare Pulmonary Hilar Rhabdomyosarcoma metastasized to the left side of the Heart

### Category

Case report

### English Abstract

**Introduction:** Cardiac metastasis is a highly life-threatening condition, because it's often asymptomatic and it could lead to heart failure, and secondary complications upon mechanical interference with cardiac function or systemic embolization. However, it is difficult to diagnose because its precise clinical features are unknown and not specific. The right side of the heart is commonly involved in metastasis, and the determination of the primary tumor could be, in some cases, a serious challenge.

**Case Presentation:** A 50-year-old woman with a history of right upper limb amputation 3 years ago for acute ischemia was admitted to the emergency room of our institution with acute left lower limb ischemia. The patient was transferred to the cardiothoracic surgery department where she underwent an urgent revascularization through a surgical embolectomy. As part of the patient's workup to find the source of the embolism, transthoracic and transesophageal echocardiographies were performed. They revealed normal dimensions of the 4 chambers of the heart with a normal left ventricular ejection fraction, and normal interatrial septum, associated to highly mobile, pedicle and echodense mass in the left atrium, attached to the upper right pulmonary venous, and prolapsing into the left ventricle through the mitral valve orifice during diastole without causing a mitral stenosis, suggesting the diagnosis of cardiac tumor. The patient was accordingly scheduled for surgery. The cardiac tumor was removed completely. During the mediastinal exploration, a tough mass in the pulmonary hilum was discovered and partially resected. The patient had an uncomplicated postoperative course. Histopathology confirmed the diagnosis of pulmonary hilar rhabdomyosarcoma with left heart metastasis. The body computed tomography showed no other metastasis. The patient had radiotherapy and chemotherapy for the primary mediastinal tumor with good results during the follow-up.

**Conclusion:** Although primary cardiac tumors are extremely uncommon, secondary tumors are not, and still the least known and highly debated issues in oncology. Their incidence seems to be not as low as expected. Owing to the highly life-threatening nature of cardiac metastases, it should be considered in all patients presenting with soft-tissues metastases or systemic embolization, in order to get an early diagnosis and to discuss wisely the treatment strategies.

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## Article

### English Title

Lipoproteins ratios in coronary artery disease patients undergoing coronary angiography

### Category

Coronary Intervention

### English Abstract

**Introduction:** Coronary artery disease (CAD) is recognized as a multifactorial disease, and dyslipidemia is closely associated with the progression of coronary atherosclerosis. The roles of plasma low density lipoprotein cholesterol (LDL-c), total cholesterol (TC), high density lipoprotein cholesterol (HDL-c), triglycerides (TG) and apolipoprotein (apo) in the evolution of CAD have been well studied. Prior studies suggested that the lipoprotein ratios could be better predictors for the occurrence and development of CAD than the individual lipid parameters. The objective of this study was to evaluate the association between lipoprotein ratios and the prediction of the severity of CAD.

**Material and Methods:** The subjects were 310 CAD patients and 207 controls. TC, TG and HDL-c were measured by enzymatic colorimetric method, LDL-c was estimated by the Friedewald equation. ApoB and apoA-1 measurements were measured by turbidimetric method (Cobas Integra 600, Roche, Germany). Lipoprotein ratios were calculated. The severity of CAD was quantified according to the degree of coronary stenosis and the prevalence of multivessel disease. We used Statistical Package for Social Sciences (SPSS, version 23.0), for data analysis.

**Results:** Our findings revealed significant difference in TG and lipoprotein ratios between patients and controls and high levels were shown in patient group. Sensitivity and specificity of these variables assessed by ROC analysis, showed that TG/HDL-c and TG (area-under-the-curve (AUC) respectively:  $0.835 \pm 0.020$ ; 95% CI:  $0.795 - 0.74$ ;  $p < 0.001$ ;  $0.740 \pm 0.025$ ; 95% CI:  $0.692 - 0.788$ ;  $p < 0.001$ ) were better predictive than LDL-c/HDL-c and TC/HDLc (AUC:  $0.650 \pm 0.027$ ; 95% CI:  $0.598 - 0.703$ ;  $p < 0.001$ ;  $0.716 \pm 0.025$ ; 95% CI:  $0.667 - 0.765$ ;  $p < 0.001$ ). HDL-c, LDL-c, TC/HDL-c and LDL-c/HDL-c were associated with stenosis degree respectively ( $p < 0.05$ ). Neither parameter of the lipid profile and their ratios was associated with the number of vessel disease ( $p > 0.05$ ).

**Conclusions:** In the present study, lipoprotein ratios were more powerful in the discrimination of both the presence and the extent of CAD than various well-known coronary risk factors of lipid profile although their implication in lesion development. This suggests that lipoprotein ratios could be added to the routine lipid profile in order to assess the atherogenic potential of lipid disorders. Despite this clinical importance, lipid-lowering agents decrease the probability that lipoproteins

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## Article

### English Title

LDL-c/HDL-c ratio is better than LDL-c levels in predicting coronary artery disease in patients without dyslipidemia

### Category

Coronary Intervention

### English Abstract

**Introduction:** Lipid particle subfractions play an important role in the atherogenic process. Low density lipoprotein cholesterol (LDLc) particles are more atherogenic than larger particles. High density lipoprotein cholesterol (HDLc) particles are considered protective. These biomarkers are involved in many steps of atherosclerosis and could be associated with the composition of coronary atherosclerotic plaque. We investigate the power of the LDLc/HDLc ratio in predicting coronary artery disease (CAD).

**Material & Methods:** The subjects were 310 CAD patients without dyslipidemia and 207 healthy subjects. HDLc levels in all patients were measured using a Cobas Integra 600 analyzer (Roche Diagnostic, Germany). LDLc levels were estimated using the Friedewald equation. Severity of CAD was quantified according to the number of vessel disease and the degree of coronary stenosis (moderate: 50–70%; severe: > 70%). Statistical Package for Social Sciences version 23 was used for data analysis.

**Results:** LDLc levels and LDLc/HDLc values were higher in patients compared with control groups (patients vs. controls: LDLc: 2.61 (0.10 – 6.20) mmol/L vs. 2.72 (0.78 – 4.92) mmol/L;  $p = 0.030$ ; LDLc/HDLc: 2.91 (0.16 – 10.84) vs. 2.27 (0.59 – 6.58);  $p < 0.001$ ). LDLc levels tended to be significantly increased according to stenosis degree (stenosis (50-70%) vs. severe stenosis (> 70%): 2.23 (0.4 – 4.16) mmol/L vs. 3.0 (0.58 – 4.64) mmol/L ( $p = 0.064$ ). Levels of LDLc/HDLc increase significantly as stenosis degree increase (stenosis (50-70%) vs. severe stenosis (> 70%): 2.61(0.34 - 4.44) mmol/L vs. 3.27 (1.57–7.13) mmol/L ( $p = 0.012$ ). LDLc and LDLc/HDLc levels didn't differ according to the number of vessel disease ( $p > 0.05$ ).

**Conclusions:** The LDLc/HDLc ratio, which is a relatively novel lipoprotein index indicating the presence of small, dense LDL particles, could serve as a potentially significant predictor of CAD, better than LDLc levels. This ratio might be contributed to the assessment of non dyslipidemic patients at high cardiovascular risk.

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## Article

### English Title

Stenting from Left Main to the Left Circumflex coronary artery outcome

### Category

Coronary Intervention

### English Abstract

**Introduction:** Percutaneous coronary intervention (PCI) for unprotected left main coronary artery (LMCA) disease is a feasible and safe approach. However, PCI strategy for distal LMCA is still debated. In most cases, stenting for distal LMCA means crossover stenting from LMCA to left anterior descending artery (LAD), rarely to left circumflex artery (LCx).

**Methods:** The aim of this study was to report clinical outcomes of stent crossover technique using drug-eluting stents (DES) from LMCA to the LCx, compared with stenting from LMCA to the LAD.

A total of 115 patients underwent PCI for distal unprotected LMCA disease between January 2002 and December 2017. Patients with cardiogenic shock or stented with bare metal stent were ruled-out. In the remaining 96 patients 16 were treated with LMCA–LCx and 80 were treated with LMCA–LAD strategy.

The study endpoint was major adverse cardiovascular events (MACE) as composite of cardiac death, MI, and target lesion revascularization (TLR).

**Results:** Both groups were comparable for baseline characteristics. The reasons for LMCA–LCx stenting in our cohort of 16 patients were none or minimal involvement of LAD ostium, the larger diameter of LCx, non-viable anterior wall. The SYNTAX score was similar in both the groups. As for Medina classification there was a trend toward more true bifurcation observed in the LMCA–LCx stenting group (75.0% vs. 67.5%;  $p=0,34$ ). The prevalence of proximal optimization technique (POT) and final kissing balloon (FKB) inflation were similar in both groups.

During hospital stay, no cardiac death, MI, and TLR were observed in both arms. The median follow-up was 13.2 months. At follow-up, there were no significant differences in MACE (31,2% vs. 17.5%; log-rank  $p = 0.072$ ). TLR was significantly higher in the LMCA–LCx stenting group (18.8 vs. 5 %; log-rank  $p = 0.018$ )

**Conclusion:** TLR rate is higher after LMCA–LCx than LMCA–LAD stenting despite POT and FKB techniques. It may therefore be important to evaluate alternative strategies for treating distal LMCA disease that extends into LCx but not LAD.

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## Article

### English Title

Percutaneous aortic valve implantation was the perfect therapeutic option for this patient with bicuspid aortic valve: A case report

### Category

Case report

### English Abstract

**Introduction:** The bicuspid aortic valve (BAV) is the most common congenital heart disease. Its degeneration occurs earlier in life, which requires, traditionally, a surgical aortic valve replacement. Owing to the non homogenous anatomic defect, these patients were excluded from the Transcatheter aortic valve implantation (TAVI) trials. However, nowadays the development of the implantation technique makes this therapeutic option safely feasible in BAVs, especially in some selected challenging cases with high risk of open heart surgery. Here, we report the case of a TAVI for severe aortic stenosis (AS) in a BAV setting in a patient with colon tumor metastasized to the liver.

**Case presentation:** An 80-year-old man with no particular medical history, candidate for total remove of a right colon tumor complicated with hepatic metastasis, reported a recent dyspnea and chest pain. The electrocardiogram showed a T wave inversion in leads I, avL, V5 and V6. The echocardiography findings included particularly a calcified BAV with severe AS, no aortic insufficiency, mild dilatation of the ascendant aorta and good left and right ventricular systolic function. The patient has been disqualified from surgical aortic valve replacement by our heart team, and was referred for TAVI. The valve (Type EVOLUT-R) was successfully implanted and the peak and mean pressure gradient decreased from 76 mm Hg to 15 mm Hg, and from 52 mm Hg to 12mm Hg respectively, with no obvious aortic insufficiency. The patient needed pace maker implantation due to persistent grade 3 atrio-ventricular block after TAVI. He was asymptomatic during the follow up and he underwent the scheduled visceral surgery with no anesthesia complications.

**Conclusion:** Transcatheter aortic valve implantation in bicuspid aortic valve is a challenging procedure that could be in some cases the only viable therapeutic option for selected patients with high surgical risk. However, it requires a perfect understanding of the complex bicuspid aortic valve anatomy to ensure a sufficient result.

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## Article

### English Title

Coarctation of the aorta in neonate: is it similar to adult form?

### Category

Other

### English Abstract

**Introduction:** Coarctation of the aorta(CoA) in new born is a diagnostic emergency.The purpose of the work was to identify the clinical, para-clinical and therapeutic features of CoA in neonates and to determine echocardiographic signs in favor of its constitution in the fetus.

**Methods:** a retrospective study including 47 patients with isthmic CoA diagnosed in neonatal période hospitalized in pediatric cardiology departement of la Rabta Hospital during the period from 2000 to 2017

**Results:** They were 36 girls and 11 boys with an average age of 14 days. The diagnosis of CoA was suspected during the anténatal period and confirmed postnatally in eight cases. Heart failure was the most common clinical picture observed in (38.5%), abolition of femoral pulse was found in (74%) and tension asymetry in all patients. Antenatal echocardiography suspected indicators of fetal coarctation especially ventriculo-arterial asymmetry in 8 confirmed postnatal CoA. Echocardiography confirmed the diagnosis of CoA and revealed a reduced ejection fraction in 31% of the cases.The abnormalities associated with CoA were dominated by the patent ductus arteriosus (68%). Prostaglandin was administered in (89.3%) cases with signs of heart failure. 31 patients were operated with good immediate results in 20 patients. The early postoperative mortality was 4, 5. late evolution was marked by occurrence of two deaths, six cases of recoarctation with a delay of 14 months, these patients were treated by with percutaneous treatment with good results.

**Conclusion:** Coarctation of the aorta in neonates is a special form of aortic CoA that differs from the child and adult forms in clinical, echocardiographic, and therapeutic characteristics. His clinical diagnosis must be early, if possible in antenatal, to assure optimal management

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## Article

### English Title

Preditors of cardiac involvement in systemic lupus erythemateux

### Category

Other

### English Abstract

**Introduction:** Cardiac involvement is the first cause of mortality in systemic lupus erythemateux (SLE). Echocardiography can be used as a non invasive tool for the assessment of this involvemnt.

**Aim of study:** to investigate the cardiac involvement in patients diagnosed with SLE assessed by echocardiography and to study relationship between several factors and cardiac manifestation.

**Methods:** An echocardiographic study of 76 patients with diagnosis of SLE. between 2005 and 2017. we also collected epidemiological characteristic of population, data related to lupus disease. Patients were assigned into cardiac abnormalities group (40 patients) and non cardiac abnormmalities group (30 patients)and compared to study relations between several factors and cardiac manifestation.

**Results:** Cardiac involvement was found in echocardiography in 52% of patients (40 patients. Echocardiographic findings showed 12 cases (38 %) of pericardial effusion. Valvular abnormalities were observed in 19 cases (48 %), Myocardium was involved in 5 cases (12.5 %). High arterial pulmonary hypertension was reported in 4 cases (10%).

Men were more vulnerable to cardiac involvement in lupus, there was signifiant relationship between disease duration and cardiac abnormalities ( $p$  0.04 ), age was not associated significantly to echocardiographic abnormalites, positif antiphospholipid antibodies(aPL+) was observed in higher frequency in cardiac involvement group with  $p < 0.01$  and especially in valvular anomalies.

**Conclusion:** echocardiography can be helpful tool for early detection of the cardiac involvement in lupus men gender, longer disease duration and a PL + are to be associated to these cardiac abnormalities.

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## Article

### English Title

Non ST elevation acute coronary syndrome: a comparative study men versus women – A report of a tunisian hospital experience

### Category

Other

### English Abstract

**Introduction:** Non ST-elevation acute coronary syndromes (NSSEACS) are the most frequent manifestations of acute ischemic heart disease.

Previous studies of a large number of patients have shown gender differences in clinical profiles, prognosis, and treatment of patients with acute ischemic cardiopathies. The aim of this work is to analyze gender differences with regard to epidemiological, clinical characteristics, treatment, and prognosis and to deduce the impact of sex gender on mortality and major cardiovascular events.

**Methods:** A retrospective study including 250 consecutive patients (men = 150 and women  $n = 100$ ) evaluated in our cardiology department of la rabta hospital from June 2008 to June 2017 for chest pain with suspected NSSEACS.

Epidemiological, clinical characteristics, laboratory tests, investigations results, treatment approach and prognosis were collected and compared between men and women.

Primary endpoint was 1 year mortality and MACE. We realized a multivariate analysis in order to deduce predictors of 1 year hospital mortality. And MACE

**Results:** Women were less represented than men, older and more likely to have a history of diabetes, hypertension, while men were more likely to have a history of myocardial infarction and revascularisation. Women presented more atypical chest pain (50% versus 15%,  $p = 0.01$ ), ST depression was more observed in women population. Non obstructive coronary angiography was more frequent in women. After adjustment for baseline differences, there were only minor differences between women and men in pharmacological treatment. Men were more often referred for coronary angiography and myocardial revascularisation.

We reported a higher hospital and 1 year mortality in women compared to men (14% versus 7%,  $p = 0.001$ ). MACE rates were higher in women population (29% versus 16%,  $p = 0.01$ ). After adjustment for confounders in multivariate analysis, gender was not a predictor factor of 1 year mortality and MACE.

**Conclusion:** Although there were differences between men and women in presentation, management, and in-hospital outcomes, gender was shown to be a non significant contributor to mortality after adjusting for confounders.

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## Article

### English Title

Successful percutaneous retrieval of an AMPLATZER DUCT OCCLUDER II after migration into segmental pulmonary artery branch

### Category

Case report

### English Abstract

**Introduction:** Interventional catheterization has emerged as the technique of choice for the closure of persistent arterial duct. This procedure is less invasive than surgery but it's not free of complications. These complications include the migration of the prosthesis into the pulmonary arterial branches whose treatment is complicated and requires the use of surgery.

**Observation:** We report the case of a 10-month-old infant with down syndrom who was diagnosed with acyanotic heart disease type persistent arterial ductus with left-right shunt with pulmonary arterial hypertension and ostium secundum atrial septal defect (ASD OS) with right cavities dilation. The heart team decision was that of percutaneous closure of the arterial duct at first and then to operate the infant in a second step to close the ASD OS surgically.

We proceeded easily with the placement of an AMPLATZER type ADO II 4x4mm prosthesis with a good primary result (Fig 1). Device migrated secondarily into a segmental branch of right pulmonary artery (Fig 2). A successful percutaneous retrieval of migrated prosthesis was achieved with a lasso snare loop system in two steps because of an initial blockage in the right common iliac vein (Fig 3,4).

The infant was operated a few months later for surgical closure of the ductus arteriosus and currently waiting for a surgical closure of the ASD OS.

**Conclusion:** The percutaneous canal closure procedure performed by expert hands gives good results with a low rate of complications. The occurrence of complications is sometimes inevitable, and these complications must be managed with the minimum possible risk for the patient.

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## Article

### English Title

Transcatheter closure of large secundum atrial septal defect in older adult with global heart failure: a high risk procedure

### Category

Case report

### English Abstract

**Introduction:** Atrial septal defect (ASD) is the second most common congenital heart disease in adults, accounting for approximately 10% of all congenital heart lesions. Transcatheter closure of secundum ASD is a well-established technique to treat children and young adults. There is strong arguments in favor of benefits of ASD closure in older populations.

**Case report:** A 58-year-old man, presented for congestive global heart failure. A transthoracic echocardiography (TTE) and transesophageal echocardiography (TOE) showed a dilatation and poor systolic function of both ventricles, with large secundum atrial septum defect, high pulmonary arterial pressure with elevation in left ventricular filling pressures. Coronary angiogram was normal.

Considering the high surgical risk, a percutaneous closure was decided after heart-team discussion. A potential complication of ASD closure in the setting of elevated left ventricular filling pressure was development of acute pulmonary oedema. Before implantation, we created a 6mm home-made central hole in a 40 mm Amplatzer Device. Then the device was successfully delivered occluding ASD with a small residual central shunt through the in-prosthesis fenestration. No changes in left ventricular end diastolic pressure occurred after closure with favorable clinical in-hospital outcome. Six-month follow-up was eventful. Echocardiographic control showed improvement of systolic function of both ventricles and decrease in pulmonary and left ventricular filling pressures.

**Conclusion:** Large ASD closure in older patient showed a significant improvement of quality of life and reduced re-hospitalizations. Caution should be undertaken in the setting of elevated left ventricular pressure in order to avoid acute pulmonary oedema.

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## Article

### English Title

Percutaneous closure of an aortic prosthetic paravalvular leak

### Category

Case report

### English Abstract

**Introduction:** Paravalvular leak (PVL) are a well-recognized valvular prosthesis complication. It causes significant morbidity and is associated with high perioperative mortality if surgery is required. Reported incidence of PVL in aortic position is 2-10 %.

**Methods:** We report our center first case experience of percutaneous transcatheter closure of aortic PVL.

**Case Report:** A 62-year-old male with history of mechanic prosthetic aortic valve replacement (Saint Jude Medical 21) and pacemaker implantation secondary to infective endocarditis complicated by perivalvular abscess and atrioventricular block, presented with NYHA class III dyspnea one year later. Blood pressure was 150/50 mmHg. The transthoracic and transoesophageal echocardiography (TTE-TEE) showed mildly decreased left ventricular ejection fraction (LVEF) estimated at 45% with left ventricular dilatation and severe paravalvular regurgitation at the region of the right aortic sinus. PVL with jet diameter of 4mm was diagnosed. He refused the option of redo-surgery and percutaneous closure was decided after heart-team discussion.

The procedure was performed under local anesthesia, TTE and TEE guidance with double femoral artery access. An Amplatzer Duct occluder II 6/6 mm device was successfully implanted by retrograde approach without complications. Significant reduction of PVL was confirmed by aortography, TTE and TEE (Figures 1,2). Patient discharge was possible 1 day later with diuretics interruption. Six-month follow-up is uneventful, the patient is asymptomatic and still free of diuretics with no signs of hemolysis. LVEF was controlled at 50%.

**Conclusion:** PVL is a rare but life-threatening complication prosthetic valve surgery especially in the setting of infective endocarditis with perivalvular abscess. Redo valve surgery is the gold standard therapy, but carries high risks. In this situations the percutaneous solution appears to be a very attractive alternative in high risk situations.

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## Article

### English Title

Pitfalls of percutaneous reinterventions on previously stented ostial left main coronary artery

### Category

Case report

### English Abstract

**Introduction:** Stenting of left main coronary artery (LMCA) can be achieved without major technical difficulties and with good immediate results but crossovering protruding stent in the ascending aorta can be very challenging and source of huge complications.

**Methods:** Hereby we report 2 cases of “stent loss” crimped in previously stented LMCA, which happened during percutaneous réinterventions on left coronary artery.

**Case report 1:** A 42-year-old female patient presented with non-ST segment elevation myocardial infarction. An iatrogenic dissection of ostial LMCA complicated its coronary angiogram and was sealed by ostial LMCA to left anterior descending artery (LAD) stenting with some struts sticking out in the ascending aorta. We accepted mild type B residual distal dissection in the LAD. The attempt to deliver a stent was complicated by stent loss, successfully retrieved by snare loop system with concomitant extraction of the previously implanted stent. Then we proceeded to full dissection stenting by the mean of 2 long stents. Two years follow-up is uneventful.

**Case report 2:** A 85-year-old man with a history of PCI of LMCA to LAD, presented with (NSTEMI). Coronary angiography demonstrated significant stenosis of the mid-LAD downstream of the previously placed stent. The left coronary ostium was difficult to intubate because of the protruding struts in the ascending aorta. The stent advancing was very complicated through the LMCA stent requiring the use of Guidezilla guide catheter extension and yet the stent blockade and we couldn't reach the lesion. Stent retrieval was complicated by stent loss with LMCA acute thrombosis with fatal outcome.

**Conclusion:** In this 2 clinical cases, we came across stent loss, when reinterventing on previously stented ostial LMCA with stent protrusion in the aorta, a complication with life-threatening issue. The first lesson is to avoid excessive stent protrusion in the aorta, the second is to make sure of deep and coaxial intubation of the guiding catheter in the central lumen of the previously implanted stent when reinterventing on the LMCA with the aim of avoiding to wire LMCA laterally through protruding struts.

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## Article

### English Title

Early detection of a left ventricular diastolic dysfunction in hypertensive patients

### Category

Other

### English Abstract

**Introduction:** Systemic arterial hypertension, a serious pathology due to its prevalence and complications, is the source of the majority of heart failure with preserved ejection fraction (HFpEF). The aim of this study was to evaluate the diastolic function of the left ventricle (LV) in asymptomatic hypertensive patients with preserved LV EF in order to detect latent diastolic dysfunction.

**Patients and Methods:** We conducted a prospective study of 112 asymptomatic and well treated hypertensive patients having no systolic LV dysfunction or significant left atrial (LA) dilation or LV hypertrophy or remodeling. We excluded from this study diabetic patients, patients with severe renal failure, coronary artery disease, valvulopathy and subjects older than 70 years.

We performed transthoracic echocardiography in these patients and we collected the parameters of the LV diastolic function: E wave, A wave, E/A, deceleration time of E wave,  $\epsilon$  in tissue doppler imaging and the indexed LA volume. We compared the group of hypertensive patients to a control group of 40 healthy subjects: these two groups were comparable in age and sex.

**Results:** The mean age of our patients was  $60.5 \pm 10.53$  years, with a male predominance.

Significant elevation of E/ $\epsilon$  ratio and LA volume and a significant decrease in E/A ratio were noted in hypertensive patients suggesting early diastolic dysfunction in these patients. A positive correlation was noted between the maximum LA volume and the E/ $\epsilon$  ratio with Pearson correlation coefficient at 0.308 ( $p < 0.001$ ).

**Conclusion:** This study shows an infra-clinical diastolic dysfunction in hypertensive patients. The identification of left atrial enlargement may be useful in uncertain cases, since we found a correlation between LA volume and the E/ $\epsilon$  ratio.

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## Article

### English Title

Does myocardial bridge has an impact on myocardial perfusion and what are the clinical outcomes in patients without coronary atherosclerosis?

### Category

Coronary Intervention

### English Abstract

**Introduction:** Myocardial bridging is defined as a congenital abnormality of the epicardial coronary artery where a portion of the artery courses into the cardiac muscle. This condition is relatively a frequent finding in coronary angiography with a prevalence of 0.5 to 12 %. During systole, this segment of the artery goes under a compression which impedes its flow and may cause myocardial ischemia. While the majority are asymptomatic, numerous studies have documented the association between MB, ventricular arrhythmias, myocardial infarction and sudden cardiac death. We aim by this work to assess the impact of MB on myocardial perfusion with the consequent clinical outcomes and to study the long-term evolution after medical treatment.

**Methods:** A review of coronary angiographies of patients diagnosed as having an ischemic heart disease was made between 2007 and 2017 in our center. The long-term follow-up of patients with myocardial bridging and systolic compression of the left anterior descending coronary artery was analyzed. Data were collected by reviewing medical records and completed by phone interviews.

**Results:** Among 169 patients diagnosed with MB, 89 (52%) of them had an isolated MB. Focusing on these patients with isolated MB, the mean age was 47 years with a slight male predominance (56%). Major cardiovascular risk factors were present in 27 %. The clinical presentation was essentially stable angina (52 %) and acute coronary syndromes (35%). Electrocardiogram signs of myocardial ischemia were present in 52%. Left Ventricular function was normal in 82% of patients. Stress test was performed in 21% of patients and came positive in 70% of the cases. The most common site was the middle segment of Left Anterior Descending artery (83%). Medical treatment was prescribed in all patients, consisting on beta-blockers (71%) or calcium channel blockers (29%). At the follow-up, 65 % of patients presented a grade I-II CCS angina despite medical treatment. In only one case, percutaneous revascularization with stent implantation was performed leading to relief of symptoms. No deaths or myocardial infarctions were observed over a follow-up period.

**Conclusion:** MB may cause myocardial ischemia with a very variable clinical presentations. Medical treatment is not efficient in all of the cases. No randomized clinical trial data exists in the literature regarding options for medical, percutaneous or surgical management.

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## Article

### English Title

Assessment of the left ventricular systolic function in hypertensive patients: the role of 2D longitudinal strain

### Category

Other

### English Abstract

**Introduction:** Hypertension is a well-recognized risk factor for cardiovascular diseases and causes left ventricular (LV) pressure overload. Early detection of subclinical left ventricular (LV) systolic dysfunction in hypertensive patients is important for the prevention of progression of hypertensive heart disease.

The aim of the present study was to detect subclinical LV dysfunction in hypertensive patients with apparently normal LV systolic function, using 2D longitudinal strain.

**Patients and Methods:** Prospective case-control study was carried out on 112 (61 male/51 female) hypertensive patients and 40 age- and sex-matched healthy subjects as a control group. Conventional echocardiographic Doppler study, tissue Doppler imaging, and 2D speckle tracking imaging were performed using Vivid 9 (General Electric Healthcare). Longitudinal strain imaging by 2D-speckle tracking echocardiography (2D-STE) was done with high-quality images from the apical four-chamber, two-chamber, and three-chamber views. The strain values for all the segments were recorded and averaged to obtain the GLS.

**Results:** In hypertensive patients, the mean age was  $60.5 \pm 10.53$  years. The size of the interventricular septum and The left ventricular mass index (LVMI) were higher in the hypertensive group ( $p < 0.001$ ). There was no significant difference in the global LV ejection fraction (LVEF) and the tele-diastolic diameter of LV between the two groups. In comparison with normal controls, GLS was significantly attenuated in patients with systemic hypertension ( $-22.5 \pm 3.19$  in the control group vs  $-17.69 \pm 4.06$  in the hypertensive group,  $p < 0.001$ ). this decrease was more marked In the hypertensive group with left ventricular hypertrophy (LVH) (SLG:  $13.57 \pm 2.045$ ) ( $p < 0.001$ ).

**Conclusion:** Our results show that 2D speckle tracking is able to detect subclinical myocardial dysfunction in hypertensive patients, despite normal global systolic parameters by conventional 2D echocardiography. This suggests that earlier intervention in these patients may be beneficial.

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## Article

**English Title**

Fatal scorpionic myocarditis: Interest of circulatory assistance (ECMO)

**Category**

Other

**English Abstract**

**Introduction:** Scorpion envenomation represents a real public health problem in the countries of North Africa. While most patients have a relatively uncomplicated clinical course, a small number of patients (less than 1% of all scorpion stings) will present with cardiogenic shock unresponsive to standard medical therapy.

**Patients and Methods:** We report 5 patients with scorpion envenomation myocarditis, who were hospitalised in Intensive Care Unit between February 2014 and August 2018, and receive ECMO in adjuvant to medical therapy.

**Results:** The median age was 25 years (range 11–39 years). Common symptoms at diagnosis included local pain (100%), gastrointestinal symptoms (80%), chest pain (60%), shortness of breath (100%) and tachycardia (100%). Laboratory tests showed metabolic acidosis with lactate elevation (100%). In addition to abnormal cardiac enzyme levels. Initial serum troponin-I cutoff values greater than 6 µg/mL.

Electrocardiography at diagnosis revealed dysrhythmia in 1 patient (VT), T-wave inversion and ST depression in the inferolateral in 3 patients and in anterior leads in 1 patient.

Transthoracic echocardiography demonstrated in all patients severe global hypokinesia of both right and left ventricles with elevated filling pressures, mid mitral regurgitation and left ventricle ejection fraction less than 35%.

The diagnosis of cardiogenic shock with pulmonary edema was made for all patients. Because of severe presentation and worsened hemodynamic status despite raising dobutamine doses (20 µg/kg/min) and adrenaline (0,3 µg/kg/min) adjuvant, we decided to initiate cardiopulmonary support by ECMO. The heart rate, blood pressure, and oxygen saturation significantly improved after initiating ECMO. During ECMO, wound haemorrhage was observed in one case.

The 5 patients were successfully weaned from ECMO treatment and discharged from the hospital. The median duration of mechanical circulatory support of 6 days (range 5–10 days).

Although myocardial damage and dysfunction were severe, cardiac function recovered normally in all the 5 surviving patients after a period of 1 month.

**Conclusion:** The severity of scorpion envenomation results from left cardiac dysfunction with pulmonary edema and / or shock. Adrenergic myocarditis, toxic myocarditis and myocardial ischemia are the main mechanisms. Scorpion myocarditis may follow a fatal course when medical support is ineffective, ECMO support may be a life-saving measure.

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## Article

### English Title

Patent ductus arteriosus closure using an Amplatzer ventricular septal defect closure device in Adulthood

### Category

Case report

### English Abstract

**Background:** The patent ductus arteriosus (PDA) is a vascular structure that connects the proximal descending aorta to the roof of the main pulmonary artery near the origin of the left pulmonary artery. The PDA normally closes spontaneously after birth.

**Method:** This report describes our experience with transcatheter closure of a PDA with a bizarre configuration on a 17 years old girl with features suggestive of a large PDA. While we intended to close the PDA using an ADO device, we changed our approach and used a VSD instead.

**Results:** The closure of the PDA was successful even if the device used was dedicated to a VSD.

**Conclusion:** The transcatheter PDA closure remains the procedure of choice in most cases. Different techniques using different devices are available.

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## Article

### English Title

Glenn bypass steal by the azygos vein treated by transcatheter occlusion: a case report

### Category

Case report

### English Abstract

**Introduction:** Development of systemic venous collaterals after Glenn or Fontan procedures can lead to systemic desaturation and reduction in ventricular function, resulting in impaired everyday performance in patients with univentricular heart disease.

**Case:** We report the case of a 5 years old boy, in whom the diagnosis of dextrocardia, tricuspid atresia with univentricular functional heart and severe pulmonary stenosis was established at 8 months of age. He was at that time bedridden and accused a very severe cyanosis with profound growth retardation (AA Sat = 50%, Weight = -2.8 SD, Height = -3.7 SD).

Echocardiography and selective angiography showed also a superior caval drainage by left and right caval veins. A double cavo-pulmonary bypass was performed in 2014 (double Glenn) followed by a significant clinical improvement (transcutaneous O<sub>2</sub> sat over 80%) and a better growth and almost normal activity. 2 years later, he started showing a worsening cyanosis, with arterial saturation drop to 70% on room air.

A complete hemodynamic and angiographic investigation aiming a total cavo pulmonary connection was performed. It showed a good bilateral Glenn circulation but a huge steal by a large azygos vein, explaining the worsening clinical status of the child. After a heart team case study, we decided to occlude the azygos vein before the Fontan totalization. The procedure was performed under general anesthesia, through the right jugular vein, by an ASD closure device of 15mm of diameter. The device was oversized to ensure its stability.

No complications were observed during or after the procedure. A very slight and transient superior caval syndrome was observed during the initial following days, but more interestingly, the O<sub>2</sub> sat raised to 82%. A totalization of the cavo pulmonary connection will be planned.

**Conclusion:** After Glenn or Fontan operations, the increased central venous pressure may induce recanalization of embryologically preformed and obliterated vessels. Their predilection sites must be carefully evaluated pre- and postoperatively. During surgical procedures, potential venous channels should be ligated. Interventional or surgical closure of collaterals may become necessary. The percutaneous procedure is safe and effective.

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## Article

### English Title

Double outlet left ventricle (DOLV): case report

### Category

Case report

### English Abstract

**Introduction:** Double-outlet left ventricle is a very rare anomaly in which both the aorta and pulmonary arteries arise completely or mostly from the morphologically left ventricle. Recent studies report that the incidence is lower than 1 per 200,000 live births.

**Case Report:** A one- year-old girl, with no family history of heart disease and with a normal birth, weighing 8kg, was admitted to the hospital with fatigue and cyanosis on effort. On examination, she was found to be in regular clinical condition, cyanotic, with a heart rate of 130bpm. Pulmonary auscultation found diffuse rales. Cardiac auscultation revealed a systolic murmur at the medium left sternal border. The pulses were symmetric and palpable. The chest X-ray showed normal heart size and decreased pulmonary flow.

Doppler echocardiography with color flow imaging showed, on a situs solitus with levocardia status, an atrioventricular concordance but with both arteries arising exclusively from the left ventricle. The pulmonary artery was posterior and left positioned, the aorta was anterior and right positioned. Subaortic large ventricular communication was identified. The aorta was more than twice the size of the pulmonary artery (17 vs 8 mm). The pulmonary valve was bicuspid and stenotic with an increased pulmonary flow velocity, at 5 m/s and a pressure gradient at 100 mmHg. The ductus arteriosus was patent. The diagnosis of DOLV with pulmonary stenosis was later confirmed at cardiac catheterization.

Surgical correction was performed by VSD closure with a patch and a 16 mm valved conduit interposition between the pulmonary trunk and the RV. The post-operative course was uneventful. Postoperative echocardiography showed good bi-ventricular function. The systolic pressure gradient across the conduit immediately after surgery was 15 mmHg.

**Discussion & Conclusion:** To the best of our knowledge, DOLV with malposition of the great arteries and subaortic VSD, as in the reported patient, has been described in a few literatures, which has been traditionally difficult to diagnose. Preoperative diagnosis of this malformation was made in approximately half of all case reports in the literature.

Echocardiography provides excellent anatomic visualization of this rare congenital anomaly. However, angiography is an additional diagnostic tool in diagnostic evaluation. Surgical treatment has excellent results.

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## Article

### English Title

A case of coronary perforation successfully treated by two covered stents

### Category

Coronary Intervention

### English Abstract

**Introduction:** Coronary artery perforation is a rare but potentially fatal complication of percutaneous coronary intervention that can result in life threatening cardiac tamponade. We present a case of an Ellis grade III coronary artery perforation during rotational atherectomy successfully treated with tow covered stents.

**Case:** An 84 year-old female with a history of long standing hypertension, hyperlipidemia presented with myocardial infarction without ST segment elevation. At cardiac catheterization, after 6 Fr sheath insertion into right radial artery. The coronary angiogram showed normal dominant right coronary and non dominant left circumflex artery with LAD showing mid long 95% calcified stenosis. It was decided to treat the lesion with coronary rotational atherectomy followed by pre-dilatation using (3 × 15 mm) balloon at 14 atms pressure.

Post dilatation angiogram showed a type III coronary perforation. Immediately, the area of perforation at the mid part of the lesion was sealed with the use of a rapid exchange covered stent but the contrast extravasation persisted, a second covered stent was deployed intra the first stent with rapid cessation of contrast extravasation. Post-covered stents angiogram showed complete sealing of the perforation.

**Conclusion:** Management of coronary perforation requires early detection and angiographic, the use of multiple covered stents can salvage a potentially life-threatening complication.

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## Article

### English Title

Catheter induced left main coronary artery dissection: Is there any more serious complication?

### Category

Case report

### English Abstract

**Background:** Coronary angiography is a routine diagnostic procedure in current clinical practice. Life-threatening complications, such as dissection of the LMCA (left main coronary artery), can arise during the procedure in a small number of patients. Yet; is an uncommon complication, LMCA dissection is a devastating accident of selective coronary angiography that can compromise the coronary blood flow to an extensive area of the myocardium becomes clinically evident in most patients shortly after the injury.

**Methods and Results:** we are about to report a case of iatrogenic dissection of the LMCA occurred during an angioplasty of left anterior descending artery at a 76 years old female had been presented to the emergency department for an acute coronary syndrome without persistent ST segment elevation.

**Conclusion:** Catheter-induced left main coronary artery dissection is a rare but well-recognized life-threatening complication of coronary angiography and angioplasty that may progress to complete coronary occlusion. Awareness of the problem and its prompt recognition are essential.

**Key words:** coronary, angiography, LMCA, dissection, surgery.

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## Article

### English Title

Knowledge and skills of the patients towards their oral anticoagulant treatment by antivitamin K in Tunisia

### Category

Other

### English Abstract

**Background:** Because of its iatrogenic potential and increasing prevalence of the patients under oral anticoagulants, the use of the antivitamins K (AVK) was, for many years, the purpose of therapeutic education (ETP). However, until now, in Tunisia, we do not arrange structures regarding therapeutic education intended for the patients under AVK. Our objective was to analyze competences of the patients treated by the AVK and thus check the need to set up in our institution a therapeutic protocol of education for treatment AVK.

**Materials and methods:** We have established a descriptive cross-sectional study within the hospital Fattouma Bourguiba Monastir Tunisia. We included the patients under a long-term AVK who were presented to the consultation of cardiology. An evaluation survey of knowledge for AVK treatment is used to check the educational level of the patients.

**Results:** In absence of the specialized structures of therapeutic education for treatment AVK, the patients under long-term AVK had limited knowledge concerning their anti coagulant treatment, their biological monitoring, management of the hemorrhagic accidents and associated hygiene-dietetic measurements. That would expose these patients to thromboembolic and hemorrhagic complications. In our study, one out of ten patients had a serious hemorrhage and one out of five patients had a CIA under anticoagulant treatment.

**Conclusion:** This work shows the absolute necessity to develop within the medical structures in Tunisia of the protocols of therapeutic education intended for the patients under AVK.

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## Article

### English Title

Therapeutic evaluation of an educational program for patient under antivitamin K

### Category

Other

### English Abstract

**Background:**The vitamin K antagonists (VKA) remain to this day the only oral form of anticoagulation therapy available in Tunisia. These drugs require regular bio monitoring and may be responsible of serious complications: bleeding, recurrent thromboembolism, real public health problems. Therefore, the management of this treatment is the subject of various educational protocols which aim is to make it less iatrogenic and more efficient. To date, there are no structures in Tunisia in terms of therapeutic education intended for patients receiving VKAs. The aim of this study was to assess patient knowledge about oral anticoagulant treatment (OAT) and evaluate a protocol of therapeutic education for patients receiving VKAs, adapted to the Tunisian context.

**Methods:**It was a single-center prospective interventional almost experimental study in the PEH Fattouma Bourguiba Monastir. We included patients on long-term OAT who came to the cardiology consultation and who agreed to join our therapeutic educational protocol. The inclusion lasted 4 successive weeks. The primary endpoint was the significant improvement of the educational level measured by a questionnaire before and after therapeutic education.

**Results:** The median age of our population was 60 ± 15 years. More than half of all participants did not follow any school education. Roughly half of the population reported previous externalized bleeding episode. Seventeen percent of patients had stroke despite an anticoagulant treatment, 34 % had no available INR in their appointment to the consultation. The INR was in 56% of cases outside the therapeutic range and most of the time below the target. We studied the degree of change of correct information about their OAT before and after the TEP. The knowledge of the therapeutic range of INR and the diet to follow under VKA has improved by 77%. Out of 13 items studied, nine noted a significant improvement after the educational protocol. Our Therapeutic educational protocol dedicated to these patients was effective, in the short term, since it has improved significantly their educational level about their OAT. All patients were satisfied with the educational session (note ≥ 8 on a scale from 0 to 10).

**Conclusion:** Therapeutic education of patients receiving long lasting OAT is an absolute necessity. Our therapeutic educational protocol was effective and easy to implement.

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## Article

### English Title

Risk Score in Predicting Failure or Success for Antegrade Approach to Percutaneous Coronary Intervention of Chronic Total Occlusion: Antegrade CTO Score.

### Category

Coronary Intervention

### English Abstract

A chronic total occlusion (CTO) is defined as complete occlusion of the coronary vessel for an estimated duration of more than 3 months. The purpose of this study was to evaluate a risk score during achieving percutaneous coronary intervention (PCI) of CTO lesions using antegrade approach in order to predict its failure or success. This retrospective study was conducted in the cardiology department of sfax from January 2013 to august 2017. Clinical and angiographic characteristics of CTO lesions were analysed.

A successful PCI means to unblock coronary vessel with successful stent deployment using an antegrade approach. We studied 45 patients, mean age was  $58 \pm 10$  years. Failure rate was 42%.

In a stepwise multivariate regression analysis, presence of calcification (OR = 6.51, score = 2) occlusion length (OR = 2.6, score = 1,) bridging collaterals (OR = 3.2, score = 1), absence of stump (OR 2.8, score = 1), presence of bending (OR = 2.8, score = 1), presence of near side branch (OR = 2.7, score = 1), and absence of retrograde filling (OR = 2.5, score = 1) were independent predictors of PCI failure. A score of 7 or more was associated with 100% failure rate whereas a score of 2 or less was associated with over 80% success rate.

Most factors associated with failure of CTO-PCI are related to lesion characteristics. A new risk score(range0–8) is developed to predict CTO-PCI success or failure rate during anterograde approach as a guide before attempting PCI of CTO lesions.

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## Article

### English Title

Predictive Value of SYNTAX Score in Risk Stratification of Patients Undergoing Unprotected Left Main Coronary Artery Angioplasty

### Category

Coronary Intervention

### English Abstract

**Background:** The SYNTAX score quantifies the extent of coronary disease and evaluate percutaneous coronary intervention risk depending on the number, complexity, and location of lesions.

This study sought to estimate the prognostic value of the SYNTAX score in a group of patients with unprotected left main coronary artery (ULMCA) angioplasty in our center.

**Methods:** 125 patients were studied (79.7% male; mean age, 66 ± 12 years) who underwent ULMCA angioplasty between January 2013 and December 2016.

Multivariate Cox logistic regression analysis was used to evaluate the relation of SYNTAX score to the incidence of cardiovascular death and major adverse cardiac events (MACE) – an endpoint comprised of cardiovascular death, non-fatal acute myocardial infarction, and target vessel revascularization.

**Results:** At 30 days, there were 5 cardiovascular deaths (4.2%). In the mean follow-up of 30 ± 24 months, there were 17 cardiovascular deaths (14.4%) and 30 MACE (25.4%).

At 30 days, SYNTAX score had no predictive value, but at long-term follow-up, it significantly predicted the occurrence of cardiovascular death (adjusted hazard ratio, 1.069,  $p < 0.0001$ ) and MACE (adjusted hazard ratio, 1.044;  $p = 0.005$ ), even after adjustment for potential confounders. Area under the curve for the occurrence of cardiovascular death and MACE was 0.75 ( $p = 0.0006$ ) and 0.63 ( $p = 0.032$ ), respectively.

**Conclusions:** In this population of patients undergoing ULMCA angioplasty, SYNTAX score was demonstrated to be a valuable tool to predict long-term cardiovascular mortality.

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## Article

### English Title

Giant Left Atrial Myxoma With Mitral Valve Obstruction: A Case Report

### Category

Case Report

### English Abstract

Myxoma is the most common type of cardiac tumor that occurs primarily in the left atrium. Clinical symptoms depend on size and location, it can be revealed by complications such as embolic accidents, heart failure and pulmonary hypertension. Transthoracic echocardiography is the mainstay of diagnosis. Surgical removal of the tumor allow an excellent long-term prognosis. we report a case of a giant left atrial myxoma in a 54-year- old woman that caused mitral valve obstruction and pulmonary hypertension.

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## Article

### English Title

2 years outcomes of PCI in acute STEMI patients in a single university hospital centre in Tunisia

### Category

Coronary Intervention

### English Abstract

**Introduction:** Few prospective studies exist in our country, to evaluate outcomes of percutaneous coronary intervention (PCI) in acute ST elevation myocardial infarction (STEMI).

**Aims:** To evaluate 2 years outcomes of PCI in acute STEMI patients in a single university hospital centre in Tunisia.

**Methods:** Prospective observational study of 150 consecutive acute STEMI patients treated with primary or rescue PCI within 24 hours from symptoms onset; in a period from June 2014 to June 2016.

**Results:** 150 patients were enrolled. 78% were males and mean age was 60,  $7 \pm 12$ , 3 years (Y). 68% were smokers and 40% had type 2 diabetes mellitus. 62% had primary PCI. Mean time between symptoms onset and angioplasty was  $12 \pm 7$  hours. 25, 3% has acute heart failure. Reperfusion was achieved in 84, 6%. Mortality was 14% at 2 Y. After multivariate analysis independent 2Y predictors of mortality were Age  $> 75$  Y (Hazard Ratio HR 2.2, 95% CI 1.1–7.8,  $p = 0.037$ ), Ejection Fraction EF  $< 35\%$  (HR 8.4, 95% CI 3-22,  $p < 0.001$ ) and renal failure (HR 3.35, 95% CI 1.2-12,  $p < 0.001$ ).

**Conclusion:** Despite logistic difficulties that lead to prolonged time to interventions, good results can be achieved when adopting an interventional strategy for STEMI patients

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## Article

### English Title

Acute myocardial infarction in elderly patients treated with an interventional strategy: long term outcomes and age related differences

### Category

Coronary Intervention

### English Abstract

**Background and aims:** Since our population is ageing, there is a need to study results of interventions for elderly ST segment elevation myocardial infarction (STEMI) patients. We sought to compare epidemiology, treatment and late outcomes between young and elderly patients.

**Methods:** A prospective study. Patients admitted in our hospital cardiology unit for a STEMI within 24 hours from symptoms onset and treated with primary or rescue percutaneous coronary intervention (PCI) was consecutively enrolled. 75 year old is the arbitrary adopted definition for elderly. Mean follow-up period was 24 months. MACE is a composite outcome of death, non-fatal MI, target vessel revascularisation and stroke.

**Results:** 25 patients was > 75 years old and represented 16,7% of our study population. 52% were females versus 15,2% in the young group  $p < 0.001$ . There was no significant difference in cardiovascular risk factors prevalence, mean time to PCI, Incidence of acute heart failure, cardiogenic shock and STEMI location. Anaemia and renal impairment were more frequently observed in the elderly group 48% and 62 % versus 12,8 % and 13,6%  $p = 0.002$  and  $p = 0.009$  respectively. Primary PCI was chosen in 80% of the patients in the elderly group versus 58% in the remaining patients  $p < 0.001$ .

Angiography, achieved by radial access at comparable rates in both groups, showed no difference in multi-vessel disease incidence. Although direct stenting was less used in the elderly group 20% versus 61% ( $p < 0.001$ ) procedure success rate wasn't statistically different 84% versus 85%  $p = 0,8$ . In hospital MACE was 20 % in the elderly patients versus 8% in the young patients  $p = 0.08$ . Two years mortality from any cause was 30% in the elderly group than in the young group 12,9%  $p = 0.021$  but two years MACE (34% versus 23%  $p = 0.18$ ) wasn't different.

**Conclusion:** Although comorbidities were more frequent, primary PCI was the preferred way to treat elderly STEMI patients with the same rate of success. Mortality was higher in this patient's subset.

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## Article

### English Title

Management of STEMI during weekends

### Category

Coronary Intervention

### English Abstract

**Introduction:** "The weekend effect" has been correlated in some studies with a worse prognosis in patients admitted for ST elevation myocardial infarction (STEMI). This has been partly explained by the reduction in the number of physicians available to provide care in hospitals and less reliance on an invasive reperfusion strategy.

**Methods:** This is a single-center retrospective study including 1686 patients admitted for STEMI between January 1995 and December 2015. Two groups were identified: Group (G1) including 426 patients hospitalized on weekends (Saturday and Sunday) and Group (G2) including 1260 patients hospitalized on weekdays (Monday to Friday).

**Results:** For G1, the therapeutic strategy consisted on medical treatment in 39.4%, thrombolysis in 33.1%, primary angioplasty in 23.7% and rescue angioplasty in 3.8% and there was no difference comparatively to G2 ( $p = 0.406$ ). Thrombolysis was mainly performed by streptokinase in both groups (86.6% and 88.1%, respectively for G1 and G2,  $p = 0.640$ ). There was no significant difference in the mean delay to thrombolysis ( $3.96 \pm 2.99$  vs  $3.52 \pm 1.93$ ,  $p = 0.480$ ). The success rate was similar ( $p = 0.325$ ). The proportion of pre-hospital thrombolysis was almost the same (34.4% vs 38.2%,  $p = 0.395$ ). However, a higher rate of haemorrhagic complications was noted in G2 (11.2% vs 5.1%,  $p = 0.027$ ). Respectively for G1 and G2, angioplasty was performed by balloon in 17.1% and 19.6% ( $p = 0.553$ ), by stenting after pre-dilatation in 46.2% and 45.7% ( $p = 0.924$ ), and by direct stenting in 35.9% and 35.1% ( $p = 0.868$ ). The success rate was also similar ( $p = 0.847$ ). The majority of patients had mono-vessel disease (45.8% vs. 58.7%,  $p = 0.177$ ) and the culprit artery was essentially LAD (56.4% vs. 52.6%;  $p = 0.642$ ). In-hospital mortality was similar in the two groups (9.9% for G1 and 9.5% for G2;  $p = 0.839$ ).

**Conclusion:** Through the results of our study, there was no significant difference in terms of management of patients admitted for STEMI during weekends or weekdays.

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## Article

### English Title

A predictive factors of smoking cessation after an acute coronary syndrome: A prospective study and six months of follow-up

### Category

Other

### English Abstract

**Background:** Smoking is one of the major cardio vascular risk factor. Although preventive drug therapy is a priority after acute coronary syndrome (ACS), less is known about lifestyle changes, including regular physical exercise and specially smoking cessation.

Actually, quitting smoking is recommended after an ACS (Class I – Level A) according to the ESC recommendations. We aimed with this study to determinate the main predictive factors for smoking cessation after an ACS and the magnitude of abstinence after six months of follow-up.

**Methods:** This study was prospective and included 145 patients who had been hospitalized for ACS from May 2015 to August 2016 in Department B of Cardiology in Fattouma Bourguiba hospital in Monastir. They were an active smokers, motivated to stop smoking and were able to sign lighted consentement and ready to be present every two weeks at the consultation.

**Results:** This study included 145 patients. The mean age was 55 + 10 years. 88% patients were tagged as a big smokers. We were able to get a stop of the tobacco in 49%.

From subanalysis result smoking cessation six months after an acute coronary syndrome have significant statistic result to adherence to the smoking cessation protocol therapeutic compliance (OR = 18;  $p < 0.001$ ), to nicotine dependence (OR = 0.3;  $p = 0.03$ ), to duration to be hospitalized in intensive care cardiology unit (OR = 6;  $p = 0.007$ ) and to diabetes (OR = 7.75,  $p = 0.002$ ).

**Conclusion:** Quitting smoking is a highly effective measure to reduce morbidity and mortality in patients after ACS. That's why it should be a part of an ACS management as well as medical therapy.

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## Article

### English Title

Mid-ventricular hypertrophic Obstructive cardiomyopathy with apical aneurysm

### Category

Case report

### English Abstract

**Introduction:** Hypertrophic cardiomyopathy (HCM) is an autosomal dominant inherited genetic disease characterized by compensatory LV hypertrophy mainly due to sarcomere dysfunction. It often goes undiagnosed because many people with the disease have few, if any, symptom. Sudden death due to sustained ventricular tachycardia (VT) or ventricular fibrillation (VF) still one of the leading causes of death in individuals. Mid-ventricular hypertrophic obstructive cardiomyopathy is a rare variant form (1%) of hypertrophic obstructive cardiomyopathy known for its unfavorable prognosis.

**Case report:** In this case, we report a 65 year old woman without any cardiovascular history who was admitted to our hospital because of a palpitation and angina. On examination, the patient was conscious. Her blood pressure was 120/60mmHg and her pulse rate was at 160. The electrocardiogram demonstrated a ventricular tachycardia associated to left ventricular hypertrophy. The echocardiography revealed pronounced asymmetric left ventricular hypertrophy. The thickness of the interventricular septum was at 28mm in the mid ventricular area. No mid Ventricular obstruction was detected at rest. However Valsalva manoeuvre revealed diastolic mid ventricular obstruction. An apical aneurysm was suspected. Magnetic resonance imaging concluded to mid ventricular HCM associated to an apical aneurysm. The patient was treated with 120 mg propranolol daily and had benefit from an implanted defibrillator as a secondary prevention.

**Conclusion:** Mid ventricular hypertrophic obstructive cardiomyopathy is a phenotype distinct of hypertrophic obstructive cardiomyopathy, associated with an unfavorable prognosis. The presence of apical aneurysm served as a marker of an even worse clinical course. The primary prevention of sudden cardiac death with implantable defibrillator (ICD) is the cornerstone of modern treatment for individuals at high risk of SCD.

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## Article

### English Title

Dual atrioventricular node conduction during sinus rhythm

### Category

Other

### English Abstract

**Background:** The least common manifestation of dual AV conduction is an abrupt PR interval change in the setting of sinus rhythm. Whereas isolated cases of this phenomenon have been reported, it is possible to correlate the ECG findings with the anatomy, composition and electrophysiology of the dual AV pathways.

#### Methods: and results

In this study we report eight cases observed in our service. The mean age was 34 + 23 years. There is a female predominance with a sex ratio of 3/5. Patients were symptomatic of faintness (4), discomfort (2), palpitations (2). One patient has presented a junctional tachycardia.

Two ECG tracings include observations of an abrupt change, either lengthening or shortening of the PR interval, and persisting for varying periods of time. At the other six cases, Holter-ECG showed the PR interval change.

Therapeutic abstention was the rule in five patients. Ablation of the slow pathway was indicated in three patients (the patient with junctional tachycardia and the two who complained of palpitations where electrophysiological exploration confirmed the nodal duality and demonstrated intranodal reentrant tachycardia).

**Discussion:** Dual AV conduction is most likely a variant of normal AV conduction with one pathway having a shorter refractory period and a longer conduction interval. That the two pathways are probably anatomic structures is suggested by termination of reentrant tachycardia with ablation of the slow or fast pathway located in the atrium.

**Conclusion:** The behavior of the PR interval is consistent with dual AV conduction. Dual atrioventricular node conduction during sinus rhythm informs us about the possible mechanism of junctional tachycardia.

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## Article

### English Title

Securesens – could it be a supraventricular tachycardia discrimination algorithm?

### Category

Case report

### English Abstract

**Introduction:** Inappropriate shock was the main adverse effect of implantable cardiac defibrillation systems. The development of discrimination algorithms has significantly decreased the occurrence of inappropriate shocks in our daily practice.

The SecureSense right ventricular (RV) lead noise discrimination algorithm is designed to detect lead fracture, *p*-wave oversensing, loss of capture and other types of oversensing in order to decrease inappropriate therapy. In our case, Securesens was used for discrimination of supraventricular tachycardia.

**Methods:** It is about a 60-year-old woman who has been followed for dilated cardiomyopathy without coronary artery disease. She underwent plantation of a single-chamber ICD with an integrated bipolar single-coil lead for secondary prevention of ventricular tachycardia. The basic rhythm is atrial fibrillation arrhythmia.

On the occasion of her third consultation, Telemetry shows a clear discrepancy between NF and FF channels. Near-field (NF) signals that do not correspond to FF(far-field) signals indicate oversensing and inappropriate shocks were not delivered.

The chest X-ray showed a displacement of the lead which just the distal tip is left in the RV. Atrial fibrillation arrhythmia detected by the proximal tip is considered a “fast” interval by the NF channel because it is an interval shorter than the longest programmed tachycardia detection interval.

Once the algorithm is triggered, sensing begins on the FF EGM channel, which uses a sensing vector between the ICD pulse generator (can) and either the RV coil (RV coil-can) or the RV tip electrode (RV tip-can). This patient was lucky because securesens of her ICD uses a sensing vector between can and RV tip-can in such a way that atrial fibrillation arrhythmia was detected by NF but a normal ventricular rhythm was detected by distal tip(FF).

**Conclusion:** Thanks to Secure Sense algorithm inappropriate shocks for secondary displacement of the defibrillation lead have been withheld. This patient was indeed lucky because of the correct detection of the ventricular activity by the RV tip.

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## Article

### English Title

Predominant left ventricular involvement in arrhythmogenic right ventricular dysplasia

### Category

Case report

### English Abstract

**Introduction:** Arrhythmogenic right ventricular (RV) dysplasia/cardiomyopathy (ARVC) is a myocardial disease affecting primarily the RV and characterized by the gradual replacement of myocytes by adipose and fibrous tissue that lead to structural and functional abnormalities of the RV. We report a case with ARVC with predominant LV involvement with highly typical ECG and MRI features.

**Case report:** A 24-year-old male presented with fatigue, dyspnoea and palpitations evolving for 48 hours. Physical examination shows a precarious hemodynamic state with a tachycardia at around 200 bpm. Twelve-lead ECG objective ventricular tachycardia, with LBBB morphology, suggesting a RV origin.

Because of the hemodynamic instability, we opted for an electrical cardioversion. The ECG after the external electric shock shows a regular sinus rhythm with crooked and fragmented QRS fractionated low-amplitude spiking electrical activity beyond the QRS complex in all leads, but most prominent in V1–V6. When we calibrate her ECG to 50 mm/s, we unmask epsilon wave in leads V1 to V6. Echocardiography showed severely hypokinetic and dilated right and left ventricle. Magnetic resonance imaging (MRI) showed a massive dilatation of the right and left heart chambers. Coronary artery disease was ruled out by cardiac catheterization.

The patient was diagnosed as having a bi-ventricular arrhythmogenic dysplasia and has received an implantable cardioverter-defibrillator for prevention of sudden death.

**Conclusion:** Arrhythmogenic right ventricular dysplasia is a myocardial disease. It was described as an RV disease. Nevertheless, left ventricular involvement in patients with right ventricular dysplasia shouldn't be neglected because it has prognostic impact.

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## Article

### English Title

Left atrial speckle tracking analysis in patients with mitral stenosis

### Category

Other

### English Abstract

**Background:** The 2D-speckle tracking is a new echocardiographic tool to have an objective quantification of myocardial deformation.

**Aim:** We have used 2D left atrial (LA) speckle tracking to study rheumatic mitral stenosis (MS) on functional LA index.

**Methods:** 37 patients with rheumatic mitral stenosis and 20 control healthy patients were recruited and had had standard echocardiography, Doppler echocardiography, PALS (peak left atrial strain during ventricular systole) and PACS (peak left atrial strain during atrial systole) were determined by 2D speckle tracking.

**Results:** There were no significant differences in age, sex, Body mass index and LVEF. LA diameter ( $51.5 \pm 6.5$  mm VS  $36.1 \pm 4.3$  mm), LA volume ( $123.6 \pm 46.4$  ml VS  $46.3 \pm 12.9$  ml), and PSAP ( $42.1 \pm 12.1$  mmHg VS  $20.4 \pm 5.6$  mmHg) were higher in MS group.

LA velocity was altered in MS group ( $E/E'$ :  $14.4 \pm 7.6$  vs  $5.7 \pm 1.3$ ). PALS et PACS were significantly decreased in MS group (PALS:  $12.9 \pm 6.8\%$  vs  $41.2 \pm 14\%$ ; PACS:  $4.3 \pm 2.5\%$  vs  $14.6 \pm 6.2\%$ ) and this was correlated to MVA and not to mean gradient. PALS et PACS were negatively correlated to LA volume and positively correlated to LA compliance index.

In multivariate analysis,  $E/E'$  ratio was the principal independent determining factor of PALS deterioration.

**Conclusion:** We had a new view concerning LA function analysis in our study showing that LA 2D speckle tracking can be used as a promising tool to an early detection of compliance trouble in patients with rheumatic MS.

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## Article

### English Title

iatrogenic left main dissection during diagnostic coronary catheterization: How to treat?

### Category

Coronary Intervention

### English Abstract

**Introduction:** Iatrogenic left main dissection (ILMD) during diagnostic coronary catheterization, the nemesis of interventional cardiologists, is a rare but life-threatening event with a reported incidence of less than 0.1%.

**Case series:** We reported eight cases of ILMD during diagnostic coronary catheterization. The mean age of patients was 60 years and the sex ratio was 6/2. Indications of coronary angiography were acute coronary syndrome (6 cases), stable angina (1 case), chronic heart failure (1 case). Five patients were catheterized by the right transradial way and three by the transfemoral way. The left coronary system was engaged with a diagnostic 5 Fr left Judkins (JL 3.5 catheter in 5 cases, JL 4 catheter in 3 cases). The types of dissection according the NHLBI classification were Type B (5 cases), Type C (1 case) and Type D (2 cases). The coronary flow was TIMI 3 in all cases. Only one patient presented an hemodynamic instability with a cardiogenic shock. No patient died before any therapeutic attempt was performed, 2 (16%) patients were treated conservatively, and 6 (82%) patients underwent stent implantation in bail out. All patients were discharged under dual antiplatelet therapy after an hospitalization for a few days in the intensive care unit.

**Conclusion:** ILMD is a dramatic complication of coronary angiography. The management of this life-threatening situation depends on the hemodynamic stability of the patient, the type and the extent of the dissection, the TIMI flow and the association with others coronary stenosis.

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## Article

### English Title

Renal fibromuscular dysplasia with severe hypertension cured by balloon angioplasty: When? And what after?

### Category

Peripheral Intervention

### English Abstract

**Background:** Fibro muscular dysplasia (FMD) is an idiopathic, segmental, non-atherosclerotic and non-inflammatory disease of the musculature of arterial walls, that lead to a wide variety of manifestations such as stenosis, aneurysms, occlusion and dissection of small and medium sized arteries. Renal arteries stenosis related to fibro muscular dysplasia represent the common location of this disease that can constitute a treatable cause of secondary hypertension.

**Patients and Methods:** We aim to report in this work, the diagnostic, angiographic and prognosis features about 6 cases of renovascular hypertension (HTN) related to renal artery fibromuscular dysplasia that have been treated with percutaneous transluminal angioplasty (PTA) observed in our department with a systematic review of the literature.

**Results:** We report the observation of 6 patients aged between 23 and 56 years-old whose are hospitalized for a new onset HTN in one case and for a severe or a resistant HTN in the other cases related to renal arteries fibromuscular dysplasia.

A clear female predominance was found. Renal arteries CT angiography was performed in all cases as the major technique to confirm the diagnosis. Balloon PTA was the revascularization technique in 5 cases and with stenting in one case. The follow up of these patients shows no complications after the procedure and they remain stable even without medical treatment in one case.

**Conclusion:** FMD causing renal artery stenosis, thought a rare cause of renovascular hypertension is essential to be considered in young hypertensives, even in the absence of family history of hypertension. A high index of suspicion is necessary in early diagnosis and prompt treatment which would result in rapid and complete recovery.

**Key Words:** Stenosis, Hypertension, Dysplasia, Angioplasty

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## Article

### English Title

Percutaneous coronary intervention in infants: About three cases with a review of the literature

### Category

Coronary Intervention

### English Abstract

**Introduction:** Acute coronary syndrome in infants is rare comparatively to adults, in most cases it's related to some specific congenital or acquired diseases such as spontaneous coronary dissection, embolism, spasm or accelerated atherosclerosis...

Although, percutaneous coronary angioplasty (PCA) is paramount in adults who have had an acute coronary syndrome especially with stent implantation reducing the consequent mortality, it's not a common option in children and extremely rare in infants considering the complications that can be incurred.

**Patients and Methods:** We aim to report in this study three cases of patients aged less than 18 years having had an acute coronary syndrome and underwent a percutaneous coronary angioplasty with a review of the literature.

**Results:** Three patients aged respectively 4, 10 and 12 years old underwent percutaneous coronary intervention after an acute coronary syndrome with ST segment elevation related to Kawasaki disease in one case and to familial hypercholesterolemia in the other cases.

Coronary angiography had shown significant stenosis in the left coronary arteries in all cases.

Successful stent implantation with excellent revascularization was achieved in two cases and a balloon angioplasty was undergone in one case. The follow up of these patients did not show any recurrences or complications related to the PCA.

**Conclusion:** coronary angioplasty can be a viable strategy for infants and children with blocked arteries or a left ventricle dysfunction, alternative to surgical revascularization and heart transplantation when they are older, but because of the increased risk of PCA and the difficulty of heart catheterization, it remains a controversial issue.

**Keywords:** Infants, acute coronary syndrome, angioplasty.

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## Article

### English Title

Stenting the Fontan pathway for obstructed extracardiac conduits. The study two cases

### Category

Structural Intervention

### English Abstract

**Objective:** Total cavopulmonary derivation (TCD) surgery consists, in the connection of the systemic venous flow to the pulmonary arteries passively, bypassing the ventricular impulse. This is performed through two operations staged achieving a complete venous return derivation into the pulmonary circuit. For such univentricular physiology, favorable anatomic and hemodynamic parameters are needed. Otherwise, it compromises the proper functioning of the connection. Percutaneous techniques have emerged to solve complications, which aim to keep this fragile physiology in optimal circumstance.

**Methods and Results:** We present the case report of two patients who had underground a stenting or dilation for obstructed extracardiac conduits with univentricular physiology. We report two cases. The first patient: is a 27 year old girl. She is followed since the neonatal period for tricuspid atresia with Transposition of the great vessels, pulmonary stenosis and dextrocardia. She had a palliative surgery at the age of 15 days: systemic-pulmonary shunt and then a TCPD at the age of 10 years. The PAP was 12mmhg at the time of surgery. 4 years after, she developed an ascites, oedema with Budd Chiari syndrome due to stenosis of the extracardiac Fontan pathway, resistant to diuretic treatment. She had a double stenting of the lower conduit with excellent immediate angiographic and clinical results.

The second patient: is a 7 month old boy. He is followed for mitral atresia with transposition of great vessels, ASD and PAD. He had initially a partial CPD. Three years later, he has TDCP with enlargement of the right pulmonary artery. The preoperative PAP was 15 mmhg. A few months later, he develops generalized edema, ascites related to severe stenosis of the inferior conduit. He had a stenting of the RPA and angioplasty-stenting of the extra cardiac pathway with a 2 year follow-up. Excellent results had been recorded.

**Conclusion:** Transcatheter treatment of stenosis can effectively improve the hemodynamics in Fontan circulation in those with low PAP, it may lead to the disappearance of the congestive symptoms. Than obstruction should be ruled out systematically in all cases of Fontan failure.

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## Article

### English Title

Tako-Tsubo cardiomyopathy presenting with multiple complications: A case report

### Category

Case Report

### English Abstract

We report the case of a middle age patient presenting with Tako-Tsubo cardiomyopathy (TTC) with four complications of shock, mitral regurgitation, atrial fibrillation and long QT syndorm. A 64-year old women presented with anginal chest pain and a cardiogenic shock after a big argument with her husband. A slight elevation of troponin and typical left ventricular ballooning without coronary lesions suggested TTC. Within a few days dobutamine and noradrenaline infusion normalized the cardiac index.

Despite this dramatic presentation, the patient had a complete recovery with resolution of all four complications within weeks.

TTC usually has a benign clinical course but some cases can be complicated by cardiogenic shock, heart failure, supraventricular and ventricular arrhythmias or even cardiac rupture and death

**Key words:** Tako Tsubo, LV dysfunction, cardiogenic shock, atrial fibrillation, long QT.

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## Article

### English Title

Profile and outcome of staphylococcus aureus infective endocarditis (SAIE) (about a tunisian experience)

### Category

Other

### English Abstract

**Introduction:** This study evaluates epidemiological echocardiographic profile and prognostic factors of staphylococcus aureus infective endocarditis (SAIE) and compare its profile between two periods of study.

**Methods:** We conducted a retrospective analysis of 250 patients hospitalized for diagnosis of infective endocarditis in our department. SAIE accounted of 30% (75 patients ). We divided our population in two groups according to period of study from 1996 to 2006 and 2006 to 2016.

**Results:** Rheumatic valve disease was the predominant etiology of valvulopathies found in 72 patients (9 5%). Immunocompromised state was observed in 34 patients (45%). Complications were frequently dominated by heart failure (50%) and as a consequence the need of early surgery was high (45%). The global in hospital mortality rate of SAIE was 27%. Independent factors of hospital mortality were: prosthetic valve endocarditis, abscess, septic complications, heart failure, embolic events. Early surgery was significantly associated with lower hospital mortality. Comparison of the two periods revealed trend to increase in systemic embolism rate and in the need to early surgery, whereas the in-hospital mortality decreased over time.

**Conclusion:** SAIE is still a serious disease associated to poor prognosis due to the aggressive nature of this pathogen leading to high rate of complication and mortality

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## Article

### English Title

Acute inferior myocardial infarction caused by left anterior descending artery occlusion

### Category

Case report

### English Abstract

**Background:** Isolated inferior myocardial infarction (MI) is usually caused by acute occlusion of either the right coronary artery or left circumflex coronary artery.

Here we report a rare case of inferior MI due to the occlusion of a wrapped left anterior descending artery (LAD).

**Case Report:** A 71 year-old man with a history of smoking was admitted to our intensive care unit with chest pain starting for two hours with stable hemodynamics. His electrocardiogram showed ST-segment elevation in the inferior leads and ST-segment depression in the precordial leads. The patient received acute thrombolytic therapy with tenecteplase within 30 minutes of admission which resulted in complete disappearing of chest pain and resolution > 50% of STsegment elevation in the inferior leads. Coronary angiography performed 24 hours later showed left dominant system. LAD was a large vessel curving around the apex and continuing as the posterior descending coronary artery and presenting 75% narrowing of the mid and distal segment. The lesion was stented with a 2.75 × 24 mm bare metal stent and achieved good angiographic result with TIMI 3 flow. The patient was discharged three days later and has been asymptomatic on regular follow-up for six months.

**Conclusion:** Our case shows a rare form of left dominant coronary circulation in which LAD wraps around the apex.

This has resulted in isolated inferior MI due to distal LAD narrowing. Cardiologists and cardiac surgeons should be aware of such a variant as it has considerable impact on the clinical course due to the large area of ischemic myocardium if the stenosis occurs in such a LAD.

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## Article

### English Title

Primary cardiac tumor in paediatric population:echocardiographic aspect and outcome

### Category

Other

### English Abstract

**Introduction:** The aim of our study was to determine the incidence of primary cardiac tumours in our tunisian paediatric population (from fetus to Childhood), to investigate echocardiographic aspects, and outcome.

**Methods:** We reviewed retrospectively the clinical, echocardiographic finding, operative, and follow-up data of 27 cases of a primary cardiac tumours detected within the period of 2000 until 2017, in the paediatric Cardiology department of la rabta hospital.

**Results:** There were 27 cases of primary heart tumours diagnosed: Rhabdomyoma ( $n = 17$ ), Fibroma ( $n = 3$ ), Teratoma ( $n = 3$ ), Myxoma ( $n = 2$ ), calcified amorphous tumor ( $n = 1$ ) and tumor of unknown origin ( $n = 1$ ). In 11 cases tumors were diagnosed in antenatal period. Postnatally, the discovery of tumors was incidentally in 5 cases, in the others cases, patients presented heart failure signs ( $n = 7$ ), cardiac murmur ( $n = 8$ ), cyanosis ( $n = 3$ ), arrhythmia ( $n = 2$ ) cases and syncope ( $n = 2$ ). Rhabdomyomas comprise 63% ( $n = 17$ ) of all the benign tumours an associated tuberous sclerosis was present in 53 % of the cases ( $n = 9$ ).

We reported 6 cases of hospital death (4 rhabdomyomas and 2 teratomas) surgery was indicated in 9 cases of primary tumors because of hemodynamic obstruction in 8 cases and resistant arrhythmia in one rhabdomyoma case.

A partial and total regression was observed in respectively 3 and 5 cases of rhabdomyomas; within a mean follow up of 92 months.

**Conclusions:** Our study illustrate that early fetal detection of cardiac tumours is possible, rhabdomyomas was the most frequent tumors in pediatric population. Echocardiographic evaluation is an effective method for the diagnosis and monitoring of patients with cardiac tumors, the strong possibility of regression of the primary cardiac tumor make that surgery was only recommended only when cardiac complications

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## Article

### English Title

Large left atrial myxoma causing multiple cerebral infarcts

### Category

Case report

### English Abstract

**Background:** Cardioembolic stroke accounts for 25% of ischemic strokes. Atrial fibrillation, valvular heart disease, acute myocardial infarction, infective endocarditis and cardiac myxoma are major sources of cerebral emboli. Cardiac myxoma, the most common benign primary cardiac tumor, is a rare cause, but an important etiology for stroke especially in the young. A delayed diagnosis and treatment may cause certain critical consequences like systemic embolic events.

**Case Report:** We report the case of a 32 year-old female patient with no previous history of cardiac problem who presented to our emergency department with severe headache, disorientation and memory loss over the past five days. On presentation she was afebrile with stable hemodynamics. The physical examination was limited by the patient's confusional state, but revealed no sensory or motor deficit. Electrocardiography showed sinus rhythm. Computed tomography scan of the brain revealed hypodensities involving the left lenticular and caudate nuclei. Magnetic resonance imaging confirmed multiple sub and supra-tentorial infarcts. These findings suggested an embolic source. Transthoracic echocardiography identified a large left atrial myxoma (55 × 24 × 16 mm) prolapsing through the mitral valve in diastole. The myxoma was surgically successfully resected five days after admission. The patient recovered without any complications and was discharged on the 15th day of hospitalization.

**Conclusion:** Embolic complications are possible presentation of atrial myxomas. Physicians should consider using echocardiography in stroke patients. Early surgical treatment of the atrial myxoma can prevent a cardioembolic stroke and its complications.

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## Article

### English Title

Impact of heart failure etiology on prognosis: about a comparative study

### Category

Structural Intervention

### English Abstract

**Background:** Heart failure (HF) has a dark prognosis due to the high rate of mortality and re-hospitalization. The aim of our study was to compare the HF-ischemic versus non-ischemic in order to identify the prognosis impact of the etiology.

**Methods:** A prospective and comparative study including 150 patients, hospitalized for HF with ejection fraction < 40% in cardiology department from 2013 to 2016, and subdivided into two groups. Group A ( $n = 65$ , ischemic HF) and group B ( $n = 85$ , non-ischemic HF).

**Results:** Group A patients were older and had significantly more frequent history of diabetes, dyslipidemia and tobacco, renal failure (RF) and anemia were more common in group A. Atrial fibrillation (AF) and left bundle branch block were more often noted in the ischemic group. Both groups were comparable according to echocardiography parameters and prescription of beta-blockers (BB), Spironolactone and Angiotensin-converting enzyme inhibitors. However, more patients from group B underwent cardiac resynchronization and cardioverter-defibrillator implantation. Hospital mortality and 6 months mortality was 6% and 13% and was higher in group A. Re-hospitalization and MACE rate was similar in both groups. Ischemic etiology of HF was predictor of mortality with (HR = 1.9,  $p < 0.01$ ). In multivariate analysis, age (HR = 3,  $p < 0.01$ ), diabetes (HR = 3,  $p < 0.01$ ), pulmonary artery systolic pressure (PASP)  $\geq 45$  mmHg (HR = 8,  $p < 0.01$ ) and the non-prescription of BB were associated with a high risk of mortality. Independent prognosis factors comparable between both groups were: age, pulmonary arterial pressure  $\geq 45$  mm Hg, dyspnea class IV of NYHA and the non-prescription of BB. However, RF was specific factors for group A and: EF < 30%, AF and TAPSE < 12 mm were specific for group B.

**Conclusion:** The ischemic etiology seems to have a worse prognosis compared to other etiologies. In order to evaluate the global prognosis, and since prognosis factors are different and related to the etiology

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## Article

### English Title

Incidence and predictors of conduction disturbances following Transcatheter Aortic Valve Implantation

### Category

Peripheral Intervention

### English Abstract

**Introduction:** Over the past decade, transcatheter aortic valve implantation (TAVI) has evolved rapidly toward an extremely reproducible, safe and effective procedure, with a marked reduction of its related complications. However, the occurrence of conduction disturbances and the need for permanent pacemaker implantation (PPI) after TAVI remains a concern.

**Aim:** To identify: incidence and predictors of conduction disturbances following Transcatheter Aortic Valve Implantation.

**Results:** Thirty TAVR procedures were performed between November 2013 and December 2016 in the military hospital of Tunis. The mean age was  $77 \pm 8$  years, 50% of patients were female. The mean Euro-score 2 was  $12.2 \pm 7$  and the mean STS score was  $10.4 \pm 4.6$ . The access site was essentially the femoral artery. Twenty-three patients had self-expandable valves and 7 patients had balloon expandable valves. The procedure success rate was 100%. Three patients implanted by self-expandable valve, presented complete atrioventricular block, two of them were implanted by a pacemaker.

**Conclusion:** Conduction disturbances after TAVI are increasingly recognized as an important issue in immediate post-TAVI implantation. The evaluation of patient's valve anatomy and the selection of the most appropriate prosthesis have been proposed as valuable options to reduce the incidence of conduction disturbances.

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## Article

### English Title

Valvular performance and aortic regurgitation following transcatheter aortic valve replacement using balloon expandable valve versus self expandable valve for severe aortic stenosis

### Category

Structural Intervention

### English Abstract

**Objective:** To compare incidence of aortic regurgitation (AR), paravalvular AR and valvular performance with Doppler hemodynamic parameters following transcatheter aortic valve replacement (TAVR) with balloon expandable versus self expandable valve.

**Methods:** It was a retrospective mono-centric trial that included 30 patients treated between November 2013 and December 2016 in the military hospital of Tunis. Endpoints were post-TAVR moderate to severe AR and paravalvular AR, effective orifice area (EOA), mean trans-aortic pressure gradient (MPG).

**Results:** Moderate to severe AR and paravalvular AR were noted in one patient at 1 month in the self expandable group compared to balloon expandable group EOA were significantly higher in balloon expandable group (SE:  $1.9 \pm 0.39$  cm<sup>2</sup>; BE:  $2.5 \pm 0.66$  cm<sup>2</sup>;  $p = 0.02$ ) and MPG was not significantly different between the two groups (SE:  $7.71 \pm 3.1$  mm hg; BE:  $10.8 \pm 10.8$  mm hg;  $p = 0.47$ ).

**Conclusions:** This study may suggest that self-expandable is associated with higher incidence of post-TAVR paravalvular AR. Echocardiographic valvular performance measures (EOA) showed significant difference, which may not be clinically significant. The echocardiographic follow-up of patients who underwent TAVR should entail an assessment of paravalvular regurgitations. A multiparametric approach is mandatory to assess the severity of PVR.

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## Article

### English Title

In-hospital impact of atrial fibrillation in patients with ST segment elevation myocardial infarction

### Category

Other

### English Abstract

**Introduction:** Atrial fibrillation (AF) is a common arrhythmia (6 to 21%) encountered in patients with ST segment elevation myocardial infarction (STEMI). However, its prognostic influence remains controversial. In this study, we sought to describe the management of STEMI in patients with AF, and to evaluate its impact on the in-hospital outcomes.

**Methods:** This is a single-center retrospective study including 1686 patients admitted for STEMI between January 1995 and December 2015. We identify two groups: patients with (G1,  $n = 111$ ) and without (G2,  $n = 1575$ ) AF.

**Results:** AF represents 6.6% (G1), and patients were on AF at the time of diagnosis in 45.95% (51), but only 3 had permanent AF with oral anticoagulation. The rest of patients (60/54.05%) developed AF during hospitalization with an average delay of  $41.46 \text{ h} \pm 73.93 \text{ h}$ . The majority of patients in G1 were male (77.5%), and older than the patients in G2 ( $67.2 \pm 11.65$  vs  $60.0 \pm 12.58$ ;  $p < 0.001$ ). The most prevalent clinical risk factors were smoking (56.8% vs 67.2%;  $p = 0.017$ ), diabetes mellitus (42.3% vs 37.5%;  $p = 0.177$ ), and systemic arterial hypertension (34.2% vs 31.1%;  $p = 0.279$ ). Comparatively to G2, patients with AF presented more heart failure (38.7% vs 19.9%;  $p < 0.001$ ), especially cardiogenic shock (7.2% vs 2.1%;  $p = 0.004$ ). The use of mechanical ventilation and inotrope/vasopressors drugs was more important (respectively 21.5% vs 6.7%;  $p < 0.001$  and 35.5% vs 14.1%;  $p < 0.001$ ). The therapeutic strategy consisted on medical treatment in 34.2%, thrombolysis in 35.1%, primary angioplasty in 28.8% and rescue angioplasty in 1.8%. In-hospital mortality was significantly higher in G1 (25.2% vs 8.5%;  $p < 0.001$ ), but we didn't find AF as an independent predictor of in-hospital mortality in the multivariate analysis.

**Conclusion:** AF is associated with worse in-hospital outcomes in STEMI patients. New onset AF seems to be associated with an increased risk of mortality. More studies should be done to evaluate long term outcomes.

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## Article

### English Title

Materno-fetal become after percutaneous mitral commissurotomy during pregnancy: results after 20 years

### Category

Structural Intervention

### English Abstract

**Introduction:** Rheumatic mitral stenosis is one of the most heart diseases observed during gestation. Percutaneous mitral commissurotomy has been a good alternative to surgery for the treatment of mitral stenosis refractory to medical treatment during pregnancy. The purpose of this study is to study the immediate results of percutaneous mitral commissurotomy in pregnant women, to evaluate the clinical status of mid-term parturients and their newborns at birth and to study the long-term results of percutaneous mitral commissurotomy.

**Patients and Methods:** Our study is a cohort that included 88 percutaneous mitral commissurotomy procedures performed on 86 pregnant women in the cardiology department of the Fattouma Bourguiba Hospital in Monastir between January 1990 and December 2013, which were monitored until June 30, 2016.

**Results:** The mean age of our patients was  $29.2 \pm 5.44$  years. The average term of pregnancy was  $27.6 \pm 5.9$  weeks. The majority of patients (84.1%) were in NYHA class III or IV at the time of the procedure. The valvular anatomy assessed by the Wilkins score was relatively favorable with an average score of  $7.35 \pm 2$ . The procedural success rate in our series was 93.2%. The immediate results were excellent with a statistically significant improvement in all parameters. In fact, at the hemodynamic level, the mitral surface increased from 0.9 to 2.4 cm<sup>2</sup>, the average gradient from 22.5 to 5.6 mm Hg. For the ultrasound evaluation, the two-dimensional mitral surface has increased from 1.08 to 2.1 cm<sup>2</sup> and that measured by Doppler from 1.09 to 2.1 cm<sup>2</sup> with a mean mitral surface gain of 1.08 and 1.07 cm<sup>2</sup> respectively. Immediate complications were rare. No maternal or fetal deaths were reported, the incomplete rate was only around 2.27% and a significant MR (grade IV) was created in only one patient. All pregnancies were completed, without any case of premature delivery. The delivery was performed in the majority of cases (89.5%) vaginally, caesarean was recommended for 9 patients (10.4%) for obstetric reasons. The mean birth weight of the children was 3.1 kg with 6 cases of hypotrophy. The mean long-term follow-up clinical and ultrasonographic follow-up of patients was  $157 \pm 75.8$  months. Mitral restenosis was noted in 29 patients (34.1%) in average time of  $132 \pm 77.8$  months. Our results conclude that percutaneous mitral dilatation in pregnant women is a feasible and effective procedure with few materno-fetal complications and good obstetric prognosis.

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## Article

### English Title

On the silk road to STEMI

### Category

Case report

### English Abstract

**Introduction:** STEMI in young patients with low cardiovascular risk is rare but real and it can underline and reveal serious systemic diseases.

**Aim:** Presenting a case of STEMI complicating Behcet's disease.

**Clinical case:** It's about a 42 years old male with no family history of cardiovascular disease and having no risk factors who presented a sudden chest pain and dyspnea. ECG showed ST elevation in lateral leads and TTE revealed apical hypokinesis and preserved LVEF. Ischemia biomarkers were also elevated. Symptoms and electric modification were spontaneously solved and the patient put under anti thrombotic therapy and programmed for coronarography. During hospitalization the patient presented fever and both tongue and scrotal aphthous and elevated inflammatory biomarkers. Pathergy test was positive and Behcet disease was seriously suspected (Probability score = 5). Coronarography showed a severe left main artery stenosis and a huge aneurysm on the proximal LAD causing a slow flow and another smaller on the distal right coronary artery. Coronary computed tomography angiography found that the LAD's aneurysm compresses the main pulmonary artery and showed a thrombus within. As the diagnosis was certain the patient was put under corticoids and immunosuppressive therapy. The patient was sent to surgery for CABG after screening for other aneurysm localization and after clinical and biological recovery.

**Conclusion:** Arteritis is a rare cause of acute coronary syndromes. It should be considered in young patients with low cardiovascular risk. Coronary lesion's medical and revascularization therapy remain controversial.

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## Article

### English Title

Massive pulmonary embolism with ST an unusual segment elevation

### Category

Case report

### English Abstract

Acute pulmonary embolism is a cardiovascular emergency that is widespread and may result in fatal outcomes. The clinical presentation of pulmonary embolism is variable and often nonspecific making the diagnosis challenging. The electrocardiographic (ECG) manifestation of APE can be diverse from normal to sinus tachycardia with or without features of acute right heart strain. A few case reports describe ECG presentation of pulmonary embolism as ST segment elevation, but exact mechanism is still unclear. We present an unusual case of Acute pulmonary embolism (APE) presented with the pattern of acute STelevation on the 12-lead ECG mimicking acute myocardial infarction

A 52 year old woman was referred to our emergency department for atypical chest pain and acute dyspnea. She had been treated for pulmonary cancer for five months. she had no cardiovascular risk factors. On presentation she was dyspnoeic, tachycardiac, and borderline hypotensive with a systolic blood pressure ranging from 85-110mm. ECG showed sinus tachycardia of 120 beats/min with ST elevation in the inferior leads and V3-V5.

An immediate bedside echocardiography was performed and revealed good left ventricular systolic function without segmental contraction defects. Right cardiac chambers were enlarged, paradoxical movement of interventricular septum was noted but contractility of right ventricle was not impaired and right heart pressure was estimated to be 60 mmHg. Pulmonary angiogram was performed to look for a pulmonary embolus. A large embolus was seen obstructing the the pulmonary artery bifurcation and extends into the main pulmonary arteries. The thrombolysis was about to be given and the patient presented a cardiac arrest with no resuscitation

Massive PE is life threatening if left untreated, with rapid progression and deterioration. It lacks specific electrocardiographic pattern. And symptoms can be quite non-specific. There have been a few case reports describing ST-elevation in acute PE which cause clinical dilemma and misdiagnose on the initial presentation.

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## Article

### English Title

Longitudinal compression of a drug-eluting stent by coronary calcification

### Category

Coronary Intervention

### English Abstract

**Background:** Longitudinal Stent Compression (LSC) is defined as a shortening of the length of the stent after implantation. It is a rare complication with an incidence of 0.6 to 0.8% depending on the series, which has been described especially after the stent release, but few cases have been described before stent release. However, the consequences can be dramatic; it has been described with several types of stents, especially those of the second generation, which have poor longitudinal axial resistance.

**Case:** This case is about a 62 year old patient with a history of diabetes, Hypertension, former smoker and coronary artery bypass surgery in 2012 (The left internal mammary artery graft with the left anterior descending coronary artery and the ramus intermedius coronary artery with The right internal mammary artery graft). EKG: without abnormal findings. Myocardial Scintigraphy shows myocardial ischemia in the inferior wall with a normal ejection fraction.

Angiogram shows:

- Intermediate lesion on left main vessel.
- Intermediate calcified lesion on the left anterior descending coronary artery with a severe stenosis on her middle part.
- Severe stenosis of the ostium of the circumflex artery.
- CTO of the ramus intermedius and distal right coronary artery.
- Both of internal mammary arteries graft were degenerated

We decided a revascularization of the left main vessel in the direction of the left anterior descending coronary artery by a DES 3.5 × 48 mm.

The left main vessel was cannulated with EBU 3.5 6F guide catheter, lesion was crossed with 0.014 inch guide wire. Thereafter, a 3.5 mm × 48 mm DES was advanced in the left anterior descending coronary artery but it could not be pushed across the calcified mid part of this vessel. We deployed the stent at this point and the segment of longitudinal compression was post-dilated with 3.5 mm × 15 mm non-compliant (NC) balloon

During forceful manipulations to push it, the proximal part of stent got stuck-up at this calcified lesion and resulted into longitudinal compression of proximal part of the stent. A second DES 2.75 × 33 mm was deployed in the residual distal lesion with a final post-dilatation of the Overlap area. The final angiogram shows an acceptable outcome.

**Conclusion:** LSC is a rare phenomenon, which is observed with most of newer thin-strut DES having a 2-link offset peak-to-peak stent design. A careful manipulation and avoiding forceful maneuvers can avoid such complication.

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## Article

### English Title

Ruptured mycotic superior mesenteric Artery Aneurysms and infective endocarditis

### Category

Case report

### English Abstract

**Introduction:** Infective endocarditis (IE) is a deadly disease. Despite improvements in its management, IE remains associated with high mortality and severe complications. Infectious aneurysms, a rare complication, result from septic arterial embolism to the intraluminal space or vasa vasorum or from subsequent spread of infection through the intimal vessels. Aneurysms of the superior mesenteric artery (SMA) and branches are uncommon and have a high rate of rupture and mortality. We describe the presentation and management of a case presenting with infectious endocarditis and ruptured SMA branch aneurysm.

**Case report:** A 50-year-old female, diagnosed with mitral insufficiency 15 years ago, presented with fever associated with systemic symptoms of chills, poor appetite and weight loss. Transthoracic echocardiography showed valvular vegetation (15\*10mm) associated with mild mitral insufficiency. The patient was treated with antibiotics (oxacilline+ampicilline+gentamicin) with good initial evolution. During pre-surgery evaluation, the patient developed abdominal pain, low blood pressure and hemorrhagic choc. Computed tomography angiogram revealed an important hemoperitoneum, and contrast extravasation due to aneurysms rupture originating from an SMA's branch. She was transferred for urgent surgery. On laparotomy, we found a large, inflamed, pulsatile mesenteric mass with free blood in the pelvis. The transverse mesocolon was retracted and proximal control of the SMA obtained at the base of the mesentery. The aneurysm was adherent to the retroperitoneum, requiring meticulous dissection before it could be exposed and opened. Evidence of necrotic small bowel was detected and resection of 25cm with confection of an ileostomy was performed. The entire bowel was inspected and showed no evidence of further ischemia. Six days later, the patient was extubated and transferred out of the intensive care. Although cultures of the mesenteric aneurysm were sterile, urine culture drawn after the surgery revealed klebsiella pneumoniae BLSE. After a 49-day hospital stay, the patient was discharged and a surgery for restoring continuity after ileostomy was programmed three months later.

**Conclusion:** Although main trunk and superior mesenteric artery (SMA) branch aneurysms account for only 5.5% of all visceral artery aneurysms, early identification and expedient management are very important given an associated 38–50% rupture rate and 30% mortality.

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## Article

### English Title

Percutaneous coronary intervention for chronic total occlusion: Is it safe?

### Category

Coronary Intervention

### English Abstract

**Background:** Percutaneous coronary intervention (PCI) is becoming the revascularization of choice for chronic total occlusion (CTO) in native coronary arteries due to the development of angioplasty techniques and equipments. But it's not without risks. We aimed to assess the prevalence and to determine the types of complications associated with this procedure.

**Methods:** Patients who were admitted in cardiology A department of Fattouma Bourguiba university hospital in Monastir and underwent PCI for a chronically occluded native coronary artery between January 2008 to December 2015, were included in this analysis.

**Results:** The study included 200 patients (mean age  $63 \pm 8.63$  years). Among these patients, 23 (11.5%) had a complication related to the procedure. Coronary dissection was the most observed complication in our population (9%) followed by nephrotoxicity induced by contrast products (1.5%) then coronary perforation which was encountered in only 2 cases (1%). The cardiogenic shock, related to a no-Reflow phenomenon, was fortunately low (0.5%). Stent thrombosis, a dreadful complication, was observed in 1 case. No death or urgent coronary artery bypass graft (CABG) were noted.

**Conclusion:** Although the per and post-procedural complications rates of CTO remain low, it is important to recognize them in order for CTO revascularization to be performed safely and successfully ensuring a higher success rate.

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## Article

### English Title

Percutaneous coronary intervention and profile of chronic total occlusion patients

### Category

Coronary Intervention

### English Abstract

**Background:** A chronic total occlusion (CTO) is defined as the complete obstruction of a coronary artery and TIMI (Thrombolysis In Myocardial Infarction) 0 flow, with an occlusion duration > 3 months. Although, in practice it's difficult to determinate the duration of the occlusion. Percutaneous coronary intervention (PCI) of a CTO is actually a common occurrence due to the development of angioplasty techniques and equipments. We aimed to identify patients' characteristics who presented a CTO and were candidates to a percutaneous transluminal coronary angioplasty (PTCA) and this regardless of the results.

**Methods:** A retrospective sample of 200 patients with CTO who were admitted in cardiology A department of Fattouma Bourguiba university hospital in Monastir for a PCI between January 2008 and December 2015, was selected.

**Results:** The mean age of the population was 63 ± 8.63 years, mostly men 80.5 % (161 patients). 35.5% of them had a history of PCI and 4.5% had a prior CABG. Concerning the cardiovascular risk factors, 58% of patients had at least 3 risks factors; 48.5% were smokers, 57.5% (115 patients) were diabetics, hypertension was noted in 116 patients (58%), and dyslipidemia in 76 patients (38%) with a higher prevalence of hypercholesterolemia (81,5%). Coronary inheritance was present in 15 patients (7,5%). 46.5% of the angiographies were performed after an acute coronary syndrom and 30% in stable angina. The Left ventricular ejection fraction was preserved in 49% of the cases. The majority of patients (53.5%) had at least two CTO vessels. The CTO vessel was the right coronary artery (RCA) in 120 patients (51%) followed by the left anterior descending (LAD) in 51 patients (25.5%) and the left circumflex arteries (LCA) in 47 patients (23.5%).

**Conclusion:** A better knowledge of this population would allow us to develop angioplasty techniques thus making PCI the best choice to treat CTO.

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## Article

### English Title

Clinical and echocardiographic characteristics of patients with congenital pulmonary valve stenosis

### Category

Other

### English Abstract

**Background:** Percutaneous pulmonary valvuloplasty is the reference treatment of pulmonary valve stenosis.

**Aim:** The aim of our study was to present the population characteristics with echocardiographic findings of patients who underwent percutaneous pulmonary valvuloplasty.

**Material and Methods:** This is a retrospective study conducted in the pediatric cardiology department (Ia Rabta Tunisia) in a period of ten years. The patients included in the study had pulmonary stenosis requiring dilatation. Demographic characteristics and echocardiographic findings were reviewed.

**Results:** Fifty-six patients were included in our study. Average age of our population at the time of the procedure was  $48 \pm 50$  months (range from three days to 162 months) with a sex ratio of 0,9 and average weight was  $12 \pm 10$  kilogram (range from 2,8 to 41). The clinical features in two patients were consistent with Noonan's syndrome. The diagnosis was established in the neonatal period in 34% of cases with a critical form that necessitate an urgent intervention in 19%. The most frequent circumstance of diagnosis was a pulmonary murmur in 66%. Echocardiography showed a pulmonary valve annulus of  $11 \pm 2$  (range from 6 to 19), the average transvalvular gradient was  $90 \pm 26$  (range from 50 to 160) and a dysplastic valve was identified in 19,6%.

**Conclusion:** As far as we know this is the first Tunisian study describing this particular population, a larger study must be conducted with a long-time follow-up.

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## Article

### English Title

Prevalence and characteristics of coronary artery anomalies in an adult population in Tunisia

### Category

Coronary Intervention

### English Abstract

**Introduction:** Congenital coronary anomalies occur rarely and concern 0.16 to 1.3% of the population undergoing coronary angiography. Several classifications have been proposed, the most recent was proposed by Angelini. Although generally benign, some may be responsible for dreadful complications such as sudden death, syncope, ACS. We report our experience through a population of 6358 patients.

**Methods:** This is a retrospective study screening a population of 6358 patients who underwent a coronary angiography procedure at Mongi Slim Hospital, La Marsa, Tunisia between 01/01/2009 and 22/03/2016. Coronarography interpretation was performed by at least two independent and recognized interventional cardiologists who agreed on the abnormality of coronary artery origin and/or pathway. All patients went in addition to a CT coronary angiography and the identification of these congenital anomalies of the coronary arteries was established according to the Angelini classification.

**Results:** Of the 6358 patients undergoing coronary angiography (mean age 65.2 years with extremes of 21 to 85 years), 13 (0.20%) patients (7 women and 6 men) had congenital coronary artery anomalies. The average age of these patients is 51.3 years. Coronary angiography was indicated following ACS without persistent ST segment elevation in 2 patients, stable angina in 9 patients and etiological assessment of dilated cardiomyopathy in 2 patients. Origin abnormalities were the most common congenital anomalies of the coronary arteries ( $n = 9$ , 69.2%). An inter-aorto-pulmonary pathway was associated in 3 cases and treated by surgical revascularization. A single right coronary has been present in a patient. Three cases of coronary fistulas have been reported: a coronary-pulmonary fistula (between the LM and the trunk of the pulmonary artery) without significant shunt and 2 cases of coronary-cameral fistulas.

**Conclusion:** According to our study, the incidence of congenital coronary anomalies in Tunisia is 0.20%. Although the majority of these rare abnormalities are “benign,” their identification is essential in view of the existence of “malignant” abnormalities with sometimes fatal clinical impact and in patients who can benefit from coronary angioplasty or heart surgery. The contribution of coronary CT is essential to clarify the path of the ectopic artery and its relationship with large vessels. Coronary revascularization is currently indicated in cases with an inter-aorto-pulmonary pathway.

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## Article

### English Title

State of the art in percutaneous pulmonary valve implantation: the Algerian experience

### Category

Structural Intervention

### English Abstract

**Background:** Transcatheter Pulmonary valve Implantation (TPVI) has become an alternative to surgery to treat right ventricular outflow tract (RVOT) dysfunction after surgical repair of congenital heart disease. The Melody valve was first implanted in 2000 and became commercially available in 2006. The Edwards SAPIEN valve has recently been introduced for TVPI. Algerian experience and results of 12 implantations performed in CMCI Bouismail are reported in this study.

**Methods:** All patients underwent TPVI at the pediatric medico-surgical clinic CMCI Bouismail since October 2017 were included in this longitudinal study with a follow-up duration of 1 year, they all had RVOT stenosis after a surgical repair. 9 patients (75%) had a pulmonary conduit stenosis. The coronary test compression was systematically performed before presenting.

**Results:** All the 12 patients were implanted with procedural success rate of 100%, no conduit rupture was noted. 8 patients (67%) was pretested at least 3 months prior to the implantation and four patients (16%) during the procedure. No coronary compression was reported. The patients were discharged 48 hours after the intervention. Hemodynamic parameters and right ventricle function improved after the procedure with severe decreased of the RV/PAT post-procedural gradient in Ten patients (83%), Two patients (16%) still had a mild residual RVOT stenosis. During one year follow-up observations show a good outcome with 100% freedom from reintervention and infective endocarditis.

**Conclusions:** TPVI is a relatively recent procedure, the first implantation in Algeria was in October 2017. This study report our experience with a series of 12 patients, one year follow-up observations show an excellent outcome.

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## Article

### English Title

Predictive factors of percutaneous coronary intervention success in the chronic total occlusion

### Category

Coronary Intervention

### English Abstract

**Background:** Percutaneous coronary intervention (PCI) for chronic total occlusions (CTO) has been associated with a low success rates. However, with the emergence of novel techniques and advanced equipments and especially a better knowledge of the patients' characteristics, the success rate of PCI for CTO has drastically increased. We aimed to analyse the clinical characteristics of patients presenting CTO who underwent PCI.

**Methods:** A sample of 200 patients with CTO, who were admitted for a PCI from January 2008 to December 2015, was included in this study. We identified two groups: CTO success (106 patients) and CTO failure (94 patients). The success of the procedure is defined by angiographic success (TIMI 2 or 3 flow restoration with < 20% residual stenosis after PCI) without MACE.

**Results:** The revascularization success was obtained in 106 cases (53% vs 47%) with comparable rates between procedural success and angiographic success (respectively 52% and 53%). The main cause of failure was inability of the guide wire to cross the occlusion (78.7%). In the group of CTO failure, there was a predominance of dyslipidemia ( $p = 0.003$ ) and anemia ( $p = 0.046$ ) with no significant difference for other factors: age ( $p = 0.148$ ), diabetes ( $p = 0.316$ ), hypertension ( $p = 0.887$ ), smoking ( $p = 0.673$ ), renal failure ( $p = 0.97$ ). Concerning the characteristics of the lesion, failure has been noted when the occlusion is located in the left anterior descending and the right coronary artery, when the diameter of the occlusion > 03 mm, a length > 20 mm and an angulation > 45° (respectively  $p = 0.034$ ,  $p = 0.02$ ,  $p < 0.001$ ,  $p < 0.001$ ,  $p < 0.001$ ). A second attempt of revascularization was associated with failure of the procedure ( $p = 0.004$ ). A J-CTO score (Japanese Chronic Total Occlusion: who assess angiographic complexity of the lesion)  $\geq 2$  was also associated with the failure of the procedure ( $p < 0.001$ ).

**Conclusion:** Our data shows that the complexity of the occlusion is one of the main predictive factor of the procedure's failure.

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## Article

### English Title

Clinical and angiographic features of 80 "Real-World" patients with long coronary lesions receiving at least 30 mm stenting

### Category

Coronary Intervention

### English Abstract

**Introduction:** Long coronary lesions are frequently observed in patients undergoing coronary angiography and their treatment remains a challenge for interventional cardiologists both in the revascularization strategy and in the medical management of a population with high morbidity.

**Materials and methods:** We collected from the interventional cardiology register of Mongi Slim Hospital for the year 2015, 80 consecutive patients who had a long coronary lesion requiring the implantation of one stent or more with at least 30 mm total length. The clinical data of our patients were obtained by a systematic review of the medical file of hospitalization. Coronary angiography was analyzed by one or more experienced hemodynamic cardiologists specifying the location and degree of complexity of the lesions, with reference to the American College of Cardiology and the American Heart Association classification. The quantitative analysis of the lesions was done by the GE Centricity AI 1000 Mnet Version 4.1.15.07 system.

**Results:** A total of 80 consecutive patients were included in our study. The mean age was 58.95 years  $\pm$  15.3 with a clear male predominance (sex ratio = 7.88). More than half (53.7%) were diabetic, 45% were hypertensive and 32.5% had dyslipidemia. Tobacco poisoning was common at 82.5%. A vascular history was reported in 16.2% of cases and chronic renal failure in 11.2% of cases. Sixty-three patients (80%) had a number of cardiovascular risk factors  $\geq$ 3. The most common presentation pattern was acute coronary syndrome in 77.5% of cases.

A triple vessel disease was observed in 21 patients (26.2%) whereas of the left main was involved in 8 cases (10%). We analyzed 87 long lesions  $\geq$ 30 mm (1.09 lesions / patient), including 18 bifurcation lesions. The majority of the long lesions were observed on the left anterior descending artery and its branches (48 on the LAD and 7 on the diagonals). These lesions were calcified in 34.5% of cases and tortuous in 22% of cases. Chronic occlusion was found in 5 cases (5.7%).

**Conclusion:** Patients with long coronary lesions represent a population with a very high cardiovascular risk associating several comorbidities with often multiple and severe coronary lesions thus complicating the therapeutic strategy.

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## Article

### English Title

Immediate results of balloon pulmonary valvuloplasty of congenital valvar pulmonary stenosis: report of 56 cases

### Category

Coronary Intervention

### English Abstract

**Background:** Congenital pulmonary valve stenosis is a common congenital heart disease. Percutaneous balloon valvuloplasty is the first-line treatment for this condition. The purpose of this study is to describe our centre short term results of pulmonary balloon valvuloplasty in children with pulmonary stenosis.

**Methods:** A total of 56 consecutive patients with congenital severe pulmonary stenosis were identified in our institution over a 10 year period. The clinical characteristics of patients were reviewed. Physical examination, chest X-ray, electrocardiography and transthoracic echocardiography were performed before the procedure.

**Results:** The mean age of the patients was 48 ± 50 months (range from 3 days to 13 years). There were 44 children (78.6%) who needed a single balloon and 12 children (21.4%) who needed a double balloon technique. The average balloon diameter was 13.7 ± 4.5 (range from 3.5 to 23). Dilatation was accomplished with success in 42 (75%) of 56 attempts. Balloon valvuloplasty resulted in immediate reduction in the pulmonary valvar haemodynamic pressure gradient from 87 ± 29 (range from 50 to 150) to 36 ± 21 (range from 7 to 120). Between the 14 cases of failure, 8 patients needed surgery. 3 patients required repeat balloon dilatation. 2 patients who had post valvuloplasty residual stenosis were closely followed up; the residual stenosis was due to the infundibular hypertrophy and it regressed over time. 7 patients (12.5%) had notable immediate complications. One patient (1.7%) died. Cardiac tamponade occurred in one patient (1.7%) and was drained with no sequelae. Arrhythmia was reported in 2 patients (3.5%); one patient developed atrioventricular block and died and a second patient developed supraventricular tachycardia and was treated successfully with electrical cardioversion. Femoral vein occlusion occurred in 2 cases and 2 patients had peripheral ischemia.

**Conclusion:** In our series, failure of the procedure and complications were higher than expected but are tending to decrease over time. Indeed, complications can be avoided by using the proper balloon diameter and length, short inflation time and with meticulous attention to the technique. Furthermore, pulmonary valvuloplasty is less effective in neonates with critical pulmonary stenosis and children with pulmonary stenosis associated with syndromes who were not excluded from the present series.

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## Article

### English Title

Anemia in patients with acute coronary syndrome: epidemiological profile and impact on the prognosis

### Category

Coronary Intervention

### English Abstract

**Introduction:** Anemia is an independent risk factor in coronary patients.

**Aims:** Determine the relationship between hemoglobin levels and the evolution of patients admitted into the cardiology depart of Mongi Slim Hospital for acute coronary syndrome (ACS).

**Materials and methods:** Study of 300 patients hospitalized for acute coronary syndrome (122 patients with persistent ST segment elevation and 178 without ST elevation). The patients were subdivided into 2 groups: group A (30 anemic patients) with a hemoglobin level < 11g/dl and group B (270 patients) with a hemoglobin level > 11 g/dl.

**Results:** Among the 300 patients, 256 were men (85%) and 44 were women (15%). The mean age was  $59.5 \pm 13.5$  years. The anemic subjects were older than the non-anemic:  $63 \pm 9.9$  years versus  $57 \pm 11$  years. The renal function was more impaired in anemic patients with a clearance of creatinine to 54.66 ml per minute versus 93.62 ml per minute in non-anemic patients. Anemic patients had more frequently signs of left ventricular heart failure (46 % versus 10 %). Systolic left ventricular function, however, seemed unaffected by this rate with an ejection fraction measured at 55 % in both anemic and non-anemic patients. Diastolic function was more often impaired with higher left ventricular filling pressures in anemic patients (66% versus 30%). The mean length of stay was longer for patients with anemia ( $12.5 \pm 10.1$  days versus  $7.9 \pm 4$  days). The re-hospitalization rate was also higher in these patients.

**Conclusion:** Anemia at admission for acute coronary syndrome is linked to a pejorative risk. A fairly strong relationship is found between low values of hemoglobin and the evolution of patients especially in terms of clinical or latent heart failure.

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## Article

### English Title

High blood preseasure revealing a cardiac tumor!

### Category

Case report

### English Abstract

Cardiac myxomas are the most common benign rare primary cardiac tumors. They originate in most cases in the left atrium with predilection of the interatrial septum. Since symptoms are non specific and can even be inexistent, early diagnosis may be a challenge.

In this report, we will look into the case of a 42-year old woman in whom a myxoma of the left atrium has been discovered during an assessment of a systemic arterial hypertension.

Her medical history consisted of systemic arterial hypertension since two years after genitourinary prolapse surgery. On physical examination, her blood pressure was 160/90mmHg; her pulse rate was regular at 80 beats per minute and a soft diastolic murmur at the mitral valve area on auscultation. The electrocardiography demonstrated a sinus rhythm with ventricular rate at 80 beats per minute. Her biological indicators were close to normal. A transthoracic echocardiography was performed revealing a dilated left atrium with an echodense rounded mass which was pedicle and attached to the interatrial septum by a stalk. The aforementioned measured 5cm along the major axis, suggesting the diagnosis of myxoma. There was left ventricular hypertrophy with normal dimensions and normal ejection fraction. After the necessary workout The patient was transferred to the cardiothoracic surgery department.

The nonspecific symptoms due to heart myxoma make early diagnosis of this tumor a serious challenge. A high clinical suspicion prompts diagnosis, thus appropriate management remains necessary.

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## Article

### English Title

Interest of Doppler ultrasound of the supra-aortic trunks in the preoperative assessment of a valve replacement

### Category

Other

### English Abstract

**Background:** Doppler ultrasound of supra-aortic trunks is a systematic exploration in the preoperative assessment of any cardiac surgery. Its interest is proven in the preoperative assessment of coronary bypass grafting (CABG) but remains to be demonstrated for valve replacement. The purpose of our study was to evaluate this interest

**Methods:** We counted in 666 patients who benefited from a carotid doppler ultrasound as part of the preoperative assessment of a CABG or valve replacement in the cardiology department of Habib Thameur Hospital, from 2010 to 2017 and with the medical records and results of coronary angiography and carotid doppler ultrasound, we divided the study population into two groups:

- group 1: Patients who have benefited from a carotid doppler ultrasound as part of the preoperative assessment of a CABG
- group 2: Patients who have benefited from a carotid doppler ultrasound as part of the preoperative assessment of a valve replacement

Then we compared the epidemiological data and the carotid doppler ultrasound results between these two groups.

**Results:** Cardiovascular risk factor (CVRF) were significantly more frequent ( $p < 0.001$ ) in patient undergoing CABG particularly age, male sex, diabetes, high blood pressure, and smoking. The vast majority of these patients (93.5%) had at least 2 CVRFs. Coronary patients had more CVRF than valvular patients. The majority of coronary patients (64,3%) had at least 4 CVRFs compared with only 19.3% for the valvular patients. The prevalence of significant carotid stenosis was significantly ( $p < 0.001$ ) greater in coronary patient. Only 3 valvular patients (1.7%) had tight carotid stenosis. All of these patients were elderly ( $> 60$  years) and had HBP and 67% had a history of stroke. They all had at least 2 CVRF and 67% had at least 4 CVRF compared to only 18% for the rest of the valvular patients ( $p < 0.001$ ). There was a positive correlation ( $r = 0.145$ ) between coronary status and carotid status. Normal coronary angiography eliminated tight carotid stenosis in 98% of cases.

**Conclusion:** Valvular patients should benefit from a doppler ultrasound of supra-aortic trunks based on CVRF, especially age and hypertension, their number, history of stroke and coronary status.

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## Article

### English Title

An unforgettable bifurcation, unforgettable patient

### Category

Case report

### English Abstract

We report the case of Mr O.F. 60 years old man who was hypertensive, admitted in our department for N.S.T.E.M.I. in lateral and inferior. The Echocardiography showed severe inferior and lateral hypokinesia with ejection Fraction at 49 %. Biology was normal. He received: Aspirin 100mg, Clopidogrel 75mg, Enoxaparin, 1,6 cc, Atorvastatin 80mg, nitroglycerin I.V., Bisoprolol 5 m g and Ramipril 10mg. Because of the recurrence of the chest pain, we decided to perform a coronarography. It showed a CTO of the right coronary, Bifurcation stenosis of the Circumflex-Marginal Medina (1-1-1) and no significative stenosis on LAD. We performed a Provisional T stenting. Stent in the Marginal. We Lost the Circumflex so we used a small ballon under the stent, then we stented the Circumflex, but we lost the distal Marginal. While manipulating devices, occurred an extensive thrombosis of the Circumflex-Marginal, and the result was TIMI 0 flow, of this big artery with hemodynamic and rythmic instability leading to cardiogenic shock. The patient was managed and improved with intensive medical therapy. He was discharged asymptomatic. At 30 days the ejection fraction was at 45% with teral and Inferior akinesia and modrate Mitral regurgitation, without viability. This case illustrates the need to make PCI more complex with 2 stents technique to secure the 2 coronary branches of the bifurcation, as the Crush or mini-crush technique.

**Conclusion:** "make the procedure complexe for more safety"

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## Article

### English Title

The revenant

### Category

Case report

### English Abstract

**Introduction:** When emergency strikes and medical resources are limited, life saving is deeply hampered and can require sometimes desperate measures.

**Aim:** Presenting a critical case needing urgent vascular surgery managed only by reanimation and an endovascular desperate angioplasty attempt.

**Clinical case:** It is about a 60 years old male with history of CAD and stent implantation in the LAD and the Cx since 2016. He had also severe LV dysfunction (LVEF = 30%). The patient was admitted in the emergency room for acute abdominal end lower limbs pain and cardiogenic choc. On examination he showed an altered consciousness statue and signs of both lower limb ischemias. An aortic CT scan performed showed a complete aortic occlusion just below renal arteries level. The TTE revealed a huge apical thrombus in the LV. With no vascular surgery ward emergently available, the patient was admitted in the Cath'Lab after mechanical ventilation was put. An in situ thrombolysis and an endovascular revascularization of the aorta with balloon were successfully performed. The patient recovered miraculously but suffered from 3 strokes and reanimation complications. He was discharged on his feet after 26 days of intensive care.

**Conclusion:** No similar case survived according to the available literature despite reanimation and early surgery leaving us to say that we can only try and do our best but it is for life to find to find its way to prevail.

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## Article

### English Title

Non-ST elevation acute coronary syndromes in elderly patients: the GRACE risk score and one-year mortality in a Tunisian center

### Category

Other

### English Abstract

**Purpose:** In acute coronary syndromes without ST-elevation (ACS) mortality increases with age. This study aims to identify predictors of one-year death and assess the suitability of GRACE risk score in patients with ACS aged over 75 years.

**Methods:** Cross-sectional monocentric study of patients with ACS and age > 75 years admitted in cardiac intensive care unit of Gabes Regional Hospital (Tunisia) from July the first to December the 31th of 2016. The study population was classified into two main groups according to GRACE score: high GRACE score ( $\geq 140$ ) and intermediate or low GRACE score ( $< 140$ ). Factors associated to one-year death after discharge were assessed by univariate and multivariate analysis. Predictor models of death were created. Diagnostic accuracy of GRACE risk score was assessed by ROC curves.

**Results:** Out of 196 patients admitted in the study period for ACS, there was 88 (44,9%) aged over 75 years. They were 46.6% men, 79.5% hypertensive, 47.7% diabetics and 73.9% high GRACE score. At one-year follow up, we identified 17 deaths (19.3%) and they were all from the high GRACE score group. Independent predictors of one-year death were: GRACE > 148 (OR 8.1, CI [1.6–41.0],  $p = 0.011$ ), and betablocker use was protective (OR 0.18, CI [0.05–0.63],  $p = 0.007$ ). ROC analysis demonstrated no value of GRACE risk score in one-year death prediction (AUC = 0.62 [0.48–0.73],  $p = 0.152$ ).

**Conclusion:** GRACE was not suitable for one-year death prediction in this age group. Larger studies are needed to assess and improve the discrimination performance of this score in predicting mortality in elderly.

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## Article

### English Title

Reccurent in drug eluting stent restenosis

### Category

Case report

### English Abstract

**Background:** Percutaneous coronary intervention (PCI) is actually the most used technique of revascularization versus coronary artery bridging graft(CABG). However repeat reintervention is most frequent with PCI because in stent restenosis. The management of repeat in stent restenosis is less codified.

**Clinical presentation:** A 54 years old men with a history of treated hypertension, first PCI of the proximal left artery descending (LAD) with implantation of 3.0 × 15mm Orsiro (Biotronic) drug eluting stent (D.E.S) 3 years ago. 1st in stent restenosis occurred 6 months after and treated with implantation of 3.5 × 15mm Resolute Integrety (Medtronic).

**Angiographic presentation:** the patient was addressed to our institution for reccurent stable angina, 1 year after the last revascularization. Coronary angiography showed reccurent in stent restenosis (figure 1). We decided to perform PCI using 3.5 × 20mm drug eluting balloon (DEB) Sequent(B Brun) after the preparation of the artery with a non compliant balloon 3.5 × 15mm inflated to 20 Atm, the angiographic result was good(figure 2). Unfortunately the patient presented typical angina 3 months after. As expected coronary angiography, showed repeat in stent restenosis (figure3).At this moment the option of CABG was discussed, finally because the fact that is one vessel disease, we performed repeat PCI using another DES (Xience Expedition Abbott) 3.5 × 18mm (figure 4). The patient is actually free from symptoms 20 months after the last PCI and treadmill test was normal.

**Conclusion:** CABG is the conventional treatment after the 2nd in DES restenosis, however in selected case especially in one vessel disease patient repeat implantation of stent(3 layers of stent) may be effective.

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## Article

### English Title

Valvular performance and aortic regurgitation following transcatheter aortic valve replacement using balloon expandable valve versus self expandable valve for severe aortic stenosis

### Category

Coronary Intervention

### English Abstract

**Objectives:** To compare incidence of aortic regurgitation (AR), paravalvular AR and valvular performance with Doppler hemodynamic parameters following transcatheter aortic valve replacement (TAVR) with balloon expandable versus self expandable valve.

**Methods:** It was a retrospective mono-centric trial that included 30 patients treated between November 2013 and December 2016 in the military hospital of Tunis.

Endpoints were post-TAVR moderate to severe AR and paravalvular AR, effective orifice area (EOA), mean trans-aortic pressure gradient (MPG).

**Results:** Moderate to severe AR and paravalvular AR were noted in one patient at 1 month in the self expandable group compared to balloon expandable group EOA were significantly higher in balloon expandable group (SE:  $1.9 \pm 0.39$  cm<sup>2</sup>; BE:  $2.5 \pm 0.66$  cm<sup>2</sup>;  $p = 0.02$ ) and MPG was not significantly different between the two groups (SE:  $7.71 \pm 3.1$  mm hg; BE:  $10.8 \pm 10.8$  mm hg;  $p = 0.47$ ).

**Conclusions:** This study may suggest that self-expandable is associated with higher incidence of post-TAVR paravalvular AR. Echocardiographic valvular performance measures (EOA) showed significant difference, which may not be clinically significant. The echocardiographic follow-up of patients who underwent TAVR should entail an assessment of paravalvular regurgitations. A multiparametric approach is mandatory to assess the severity of PVR.

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## Article

### English Title

Rare combination of biventricular non-compaction cardiomyopathy and a circumflex coronary artery-to-pulmonary artery fistula

### Category

Case report

### English Abstract

Non-compaction cardiomyopathy is a rare congenital disease resulting from the cessation of normal embryogenesis of the myocardium that may be exceptionally associated to coronary fistulae. Its main feature is the existence of many deep ventricular trabeculations generally located in the left ventricle. Diagnosis is based on echocardiography and Magnetic Resonance Imaging (MRI). To our knowledge, this is the first case reported of the association of biventricular non-compaction and a circumflex coronary artery-to-pulmonary artery fistula. The interest of this case lies in its rarity and its therapeutic implications.

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## Article

### English Title

Stent thrombosis after primary angioplasty

### Category

Coronary Intervention

### English Abstract

**Introduction:** Stent thrombosis is one of the most serious complications in patients who have had coronary angioplasty. It is usually responsible for myocardial infarction presenting as a severe clinical case. Our aim was to study the incidence of stent thrombosis in patients undergoing primary angioplasty during the acute phase of myocardial infarction.

**Methods:** We have conducted a retrospective study about 250 patients hospitalized in the cardiology department of Mongi Slim Hospital for ST-elevation Myocardial Infarction and treated with primary angioplasty, over a period of 5 years.

**Results:** In our series, the thrombosis rate was 6.4% (16 patients):

- 11 cases of acute Thrombosis
- 6 cases of sub-acute Thrombosis
- 1 case of late thrombosis
- One patient had acute thrombosis with a sub-acute recurrence.
- A second patient presented with acute thrombosis complicated with a later thrombosis.

The average duration of follow-up was 15.4 months with extremes ranging from 0 to 66 months. During this follow-up, no very late thrombosis (occurring 1 year after the procedure) was diagnosed.

In addition, we noted 50% of deaths in the group of patients who had acute stent thrombosis, compared to 13.2% in the group of patients who did not have acute thrombosis ( $p = 0.004$ ). Acute stent thrombosis is therefore a predictor of intra-hospital mortality.

**Conclusion:** Stent thrombosis is an uncommon but severe complication of coronary angioplasty with poor prognosis. Rapid diagnosis and management would make it possible to improve the prognosis of this subgroup, which has an alarming mortality rate, exceeding 50%.

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## Article

### English Title

Occlusive and aneurysmal iliac arteries lesions in Behçet's disease

### Category

Peripheral Intervention

### English Abstract

Arterial aneurysms are uncommon vascular manifestations of Behçet's disease and linked to severe prognosis. We present a case of a 47-year-old-man with a history of Behçet's disease. He was admitted for a right lower limb thrombophlebitis. Doppler ultrasound demonstrated an occlusion of the left external iliac artery and an aneurysm of the right common iliac artery whose diameter was 60 mm. CT scan of the aorta and lower limbs confirmed the occlusion of the left external iliac artery and aneurysmal dilatation of the right common iliac artery measuring 60 mm. We decided to attempt endovascular treatment. We made an exclusion of the aneurysm by placing a stent graft and recanalization of the external iliac artery. A final opacification was made showing an exclusion of the aneurysm of the right common iliac artery and permeability of left external iliac artery. At 2 years post-procedure, the patient remained asymptomatic. The CT scan is satisfactory. A solitary iliac aneurysm in Behçet's disease is exceptional. Open surgery presents a high complication rate. The postoperative course is often complicated by graft occlusion and recurrence of aneurysms, leading to a relatively high mortality rate. Endovascular treatment is a safe alternative, being increasingly recommended for the management of vascular complications in Behçet's disease.

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## Article

### English Title

Study of aortic compliance in coronary patients based on Doppler ultrasound

### Category

Other

### English Abstract

**Background:** Coronary disease is an important cause of morbidity and mortality in the world. The elastic properties of large arteries may be impaired in the presence of cardiovascular disease. The aortic compliance is a major cardiovascular prognostic factor. Its determination is not common practice. Doppler ultrasound represents a non-invasive method to evaluate it. We set out to determine the incidence of the impairment of the aortic compliance and its correlation with cardiovascular risk factors in coronary patients by comparing them to a control group.

**Methods:** A total of 40 men and 30 women, aged 32-85 years, were studied from December 2017 to June 2018. They were divided into 2 groups: 50 coronary patients and 20 controls. The elastic properties of the aorta were determined using Doppler ultrasound. The central compliance was estimated by calculating the ratio between the stroke volume and the pulse pressure. Pulse wave velocity was calculated by dividing the distance between the two arterial sites by the difference in time of pressure wave arrival between the carotid artery and the aorta. Blood pressure was measured using the auscultatory method.

**Results:** The mean aortic compliance and pulse wave velocity in the coronary patients group were 1.06 and 13.58, respectively, vs 1.34 ml/mmHg and 7.29 msec/m in the control group ( $p < 0.001$ ). There was no correlation between the sex and elastic properties of the aorta. However, there was a strong correlation with age in both groups ( $p < 0.001$ ). Other cardiovascular risk factors were a major predictor of the aortic compliance impairment: tobacco 70%, high blood pressure 56%, diabetes mellitus 52%, and dyslipidemia 36%. The mean pulse pressure in the coronary patients group was 55.1 vs 44 mmHg in the control group ( $p < 0.001$ ). There is a positive correlation between the enlargement of pulse pressure, age and pulse wave velocity in both groups ( $p < 0.001$ ).

**Conclusion:** There is good evidence that aortic compliance is significantly altered in the group of coronary patients. It decreases with age, independently of the sex. The decrease of the compliance and the increase of the pulse wave velocity result in the enlargement of the pulse pressure. This will result in vessel damage and higher probability of strokes and infarction. It is hoped that the identification of such patients at an early stage will lead to more cost-effective preventive treatment.

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## Article

### English Title

Acute thrombosis of the left main

### Category

Case report

### English Abstract

**Background:** Acute thrombosis of the Left main coronary artery (LM) in acute coronary syndrome (ACS) is rare and have a very poor prognosis, clinical manifestations are not specific and therapeutic decisions are often difficult to make.

**Methods:** We relate here 5 cases of acute thrombosis of the LM encountered during the years 2014 to 2016 Patient 1 (P1)/ Patient 2 (P2)/Patient 3 (P3)/Patient 4 (P4)/Patient 5 (P5). All of these patients underwent angiography in our catheterization lab for ACS.

**Results:** The age of patients was between 29 and 72 years old with tobacco as a common risk factor. The first three patients (P1, P2 and P3) were admitted for NSTEMI at high risk, the latter two were admitted for STEMI, one of which was thrombolized with failure. Of the 5 patients 3 presented with shock (P1, P3 and P5). The delay for revascularization was between 1 hour and 5 hours for the first four patients, this delay was 26 hours for the last. ST segment in AVR was observed in all patients, as well as a high rate of troponin. Only the last patient had an altered LVEF.

Coronary angiography has shown in P4 P2 and P3 showed total occlusion of LM (TIMI 0). P1 and P5 showed extensive LM thrombosis extended to the LCX and total occlusion of the LAD. P1, P2 and P3 had instrumental thrombectomy under anti-GPIIb/IIIa treatment, intra-aortic balloon pump has been used for P1 and P3, we decided to delay stenting for these three patients, the angiographic control at the second step showed in P1 a coronary without significant lesion, while P2 and P3 underwent angioplasty. Surgery was performed in P4 with good results. In P5 despite thrombectomy which resulted in a good flow on the LAD but a poor downstream artery, the patient continued to degrade his heart failure leading to death on day 5.

**Conclusions:** Acute thrombosis of the left main (LM) is a scary challenging situation, the prognosis is mostly related to the speed of restoration of the coronary flow. Delayed stenting seems to appear safe to reduce the risk of embolization and no reflow. Surgery Revascularization is a reasonable attitude when the patient is stable with a low operative risk

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## Article

### English Title

Acute stent thrombosis, the question remains!

### Category

Case report

### English Abstract

**Background:** With the development of stents and antithrombotic treatments, acute stent thrombosis became very rare. Several mechanisms have been identified, we report a case where the probable cause is immunoallergic

**Case presentation:** Our patient was a diabetic hypertensive 66 years old man, admitted for class III CCS effort angina, the patient was being followed for bronchial asthma. Two years ago, he was hospitalized for NSTEMI, 07 months later he underwent angioplasty with placement of a stent on the LAD and a second on the RCA (SIROLIMUS 3rd generation). He also underwent CT angiography where he had an allergic reaction to contrast, pruritus-type.

After corticosteroids and antihistamines administration, angiography showed stent restenosis on both LAD and RCA arteries. We treated the lesion on the LAD with drug eluting balloon while we treated the RCA by 3rd generation everolimus stent implantation, the result of the latter was considered suboptimal with residual stenosis less than 10% resistant to post-dilation and loss of a right marginal of good caliber. The patient having expressed no symptoms we decided the end of the procedure.

2 hours later, the patient developed a collapse preceded by pruritus, the EKG showed posterior STEMI with third degree AVB, a coronarography showed an acute thrombosis of the stent on the RCA, a thromboaspiration allowed to recover a TIMI III flow. Despite the sedation of the thoracic pain, we went to control the LAD where surprised, we found there also stent thrombosis. Despite thromboaspiration and stenting, the patient continued to degrade his hemodynamic state leading to death.

First place we have blamed the loss of the right marginal that could have been at the origin of the AVB and slowing of the coronary flow promoting stent thrombosis. In retrospect, this fatal event is thought to be secondary to contrast agent allergy, with a KOUNIS type III syndrome, where the inflammatory response creates an environment of hypercoagulability associated with myocardial hypoperfusion, coronary spasm systemic collapse and destabilization of atheroma plaques by the release of proteases.

**Conclusion:** Stent thrombosis is rare but very serious and there are causes to which nobody thinks. KOUNIS syndrome is a potentially fatal entity that is unknown in the catheterization room, an immunoallergic reaction with unpredictable evolution whose only effective treatment remains the identification and eviction of the allergen.

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## Article

### English Title

Thrombotic embolization during primary PCI, could it have been avoided?

### Category

Case report

### English Abstract

**Background:** Embolization is a common complication in primary angioplasty, the consequence can turn dramatic when a thrombus in the left anterior descending artery (LAD) moves to the circumflex (CX)

**Methods:** We have been exposed three times to CX embolization during primary angioplasty on the LAD, we aim to share what we learned in such a situation by exposing three clinical cases.

**Results:** The first patient is a 21-year-old male, admitted for anterior ST-elevation myocardial infarction (STEMI) in shock. Coronary angiography showed complete occlusion of the ostium of the LAD. Under intra-aortic balloon pump, we performed a thrombectomy, the patient immediately presented a very instable hemodynamic state, angiographic control showed thrombotic embolization towards the CX. Despite the restoration of a satisfactory coronary flow on both arteries by thrombectomy, the patient died by cardiac arrest.

Patient 2 is a 76-year-old male admitted 7 hours after anterior (STEMI) for rescue angioplasty. Coronary angiography showed complete occlusion of the ostial LAD. We proceeded to unsuccessful thrombectomy, we performed then a balloon dilatation, the patient presented a shock, the angiography showed an embolization towards the CX, we quickly performed a thrombectomy, unfortunately death followed quickly.

Patient 3 is a 49-year-old male, received for anterior STEMI. we proceeded to a thrombectomy which improved the antegrade coronary flow on the LAD, at the time of the second passage, the patient presented a ventricular arrhythmia and shock, we noted an embolization towards the CX, we carried out a thrombectomy using the LA wire, we stented the LAD then and completed by a second optimal thrombectomy at the level of the CX, the patient underwent anti anti-GPIIb/IIIa treatment for 24h, this patient unlike the two previous had a good clinical evolution.

**Conclusions:** Embolization on the CX is possible when we perform a primary angioplasty on the proximal LAD. To better prevent this situation and its harmful consequences, we recommend the use of anti GPIIb/IIIa for high thrombotic lesions, to not hesitate to put a wire on the circumflex when ostial localization, avoid balloon predilatation especially in very proximal localization, consider the large diameter thromboaspiration catheter and finally fast restoration of satisfactory flow sole guarantor of a favorable evolution.

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## Article

### English Title

Inhospital prognosis of patients presenting acute heart failure: preliminar results on an algerian population

### Category

Other

### English Abstract

**Background:** Acute Heart Failure (AHF) has become a health burden worldwide. With its complex pathophysiology and presentation, it is the crossroad of several pathologies. A better knowledge of patients profile and pronostic factors of this syndrome would optimize management and improve the survival.

**Method:** We have performed a prospective study on patients of more than 18 years old after informed consent admitted for AHF in our service since December 2017 until April 2018. We intend to study inhospital morbimortality, presenting AHF. Our primary judgment criterion is a combination of MACE, worsening hart failure and death.

**Results:** Among 75 patients, admitted during this period, the average age was 65, sex ratio of 3 men/1 woman; 58% were hypertensive, 30% diabetic, 29% obese, 21% tobacco consumers and 28 % with dyslipidemias. 65% of AHF were de novo and 35% have chronical evolution. 42% were of ischemic cause followed by 19% of hypertensive forms and 10 % valvular heart disease mostly from rheumatic cause. FE is reduced in 42% of cases, midrange in 34% and preserved in 24%. Infections are the main precipitating factor (25%). Morbimortality is about 30% involving mostly patients with coronary disease (54%). Hospital mortality is 14%.

**Discussion:** Our population is younger compared with developed coutries (75 years in OFICA, 72-73% in ADHERE and OPTIMIZED HF) but is the same as in the registries of 1990s. Males are predominant (55% female in OFICA). HFPEF are fewer (35-50% in OFICA). Hospital mortality is higher (8 to 12% in litterature). Postrheumatic valvular heart disease is not a rare condition. Hypertension is the main risk factor, ischemic aetiology is the most common, this result is the same as in most registries.

**Conclusion:** A better understanding of AHF through specific population registries could help improving care pathways to reduce morbimortality and developing a preventive strategy.

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## Article

### English Title

Management of cardiogenic shock in Tunisia

### Category

Other

### English Abstract

**Background:** Cardiogenic shock (CS) is a severe complication of ST-segment elevation myocardial infarction (STEMI). In fact, despite the efforts to improve its management, cardiogenic shock maintains a poor prognosis with mortality exceeding 50%.

**Aim:** to study the epidemiological and clinical characteristics of patients with CS secondary to STEMI (CS-STEMI) and to describe its management.

**Methods:** It is a descriptive retrospective study including 113 hospitalized patients for CS-STEMI between 1995 and 2016 in cardiology A department, Monastir. We studied baseline characteristics and Management of patients with CS-STEMI.

**Results:** The mean age was  $65.01 \pm 12.01$  with a male predominance (sex Ratio 3:1). Smoking (59.8 %), Hypertension (38.1 %) and diabetes (49.6 %) were the most frequent risk factors.

The median time from pain onset to first medical contact (FMC) was 4 hours [Q1:2 – Q3:11]. Almost half of the patients (47.3%) arrived by Emergency medical services (EMS). Electrocardiographically, the anterior territory was the most frequent location of myocardial infarction (53.2%).

Approximately 69% of the patients received a reperfusion therapy in the acute phase of STEMI (35.4% by thrombolysis and 33.6% by primary PCI). Thrombolysis was predominantly with streptokinase (86.8%) and failed in two-thirds of cases (65.8%). Angiographic analysis of the lesions showed single-vessel coronary artery disease (CAD) in 39.2% of cases. Culprit artery occlusion (TIMI flow 0 or 1) was found in 86.8% of cases. Primary PCI restored a TIMI flow 3 in 44.7% of cases. In multivessel CAD, revascularization was complete during primary PCI in 65.2% of cases. The overall complete revascularization rate (during hospitalization) was 80.6% in these patients. Vasopressors and / or inotropes were administered to 90.8% of patients. Intra-aortic balloon pump was used in 2 cases (1.7%). The in-hospital mortality rate was 57.5% ( $n = 65$ ). Multivariate analysis identified three independent factors related to CS-STEMI mortality: inaugural chest pain, creatinine clearance  $< 60$ ml/min, TIMI flow  $< 3$  in post-PCI.

**Conclusion:** The baseline characteristics and mortality in our study were comparable to most published data. However, a greater effort should be made to further reduce it. This objective could be achieved by the introduction of a regional infarction plan and the promotion of the role of the EMS, thereby reducing the time required for early revascularization

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## Article

### English Title

Predictive factors of cardiogenic shock in acute myocardial infarction

### Category

Coronary Intervention

### English Abstract

**Introduction:** Cardiogenic shock complicating ST elevation Myocardial infarction (CS-STEMI) is a serious medical emergency that requires rapid and optimal management. It remains the leading cause of death among patients with STEMI and data on this complication are rare.

**Aim:** To identify the predictors of cardiogenic shock among patients with STEMI.

**Methods:** Single centre study analysing data of 1 672 consecutive patients admitted for STEMI between 1995 and 2016 in Cardiology Department, Fattouma Bourguiba University Hospital, Monastir, Tunisia. They were divided into 2 groups: CS+ ( $n = 113$ ) and CS- ( $n = 1 559$ ).

**Results:** The mean age of our study population (CS+) was  $65.01 \pm 12.01$  (vs.  $60.16 \pm 12.66$ ,  $p < 10^{-3}$ ). There was a male predominance with a sex ratio of 3: 1. CS+ patients had more diabetes (49.6% vs 37.1,  $p = 0.009$ ) and frequently had a history of heart failure (6.7% vs. 1.9%,  $p = 0.006$ ) compared with CS-.

The median time from onset of pain to admission was longer in CS+ (4h [2-11] vs 3h [2-7],  $p = 0.04$ ). Indeed, three quarters of patients consulted within less than 12 hours (vs 83.8% in CS-).

Chest pain was the most common sign (95.5%,  $n = 105$ ). One-quarter of the patients had chest pain in the 24 hours preceding the infarct (vs 34.7% in the CS-,  $p = 0.03$ ). Tachycardia was more common at admission in ICU ( $87 \pm 30$  vs  $80 \pm 17$ ,  $p < 10^{-3}$ ) and the ECG was more difficult to interpret with a higher percentage of LBBB (12.6% vs 3%,  $p < 10^{-3}$ ).

Biologically, CS-STEMI was frequently associated with dyslipidemia (hypertriglyceridemia and hypercholesterolemia) and renal failure (64.4% vs 36.1%,  $p < 10^{-3}$ ). In addition, it was noted that hyperglycemia was less common in CS+.

**Conclusion:** Postinfarction cardiogenic shock was more associated with a history of diabetes, heart failure, delayed initial management, and a poor biological profile. These data illustrate the profile of patients at risk for CS to help identify them in order to improve and optimize their management.

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## Article

<b>English Title</b>
Predictors of in-hospital mortality among patients with cardiogenic shock complicating acute myocardial infarction
<b>Category</b>
Other
<b>English Abstract</b>
<p><b>Background:</b> The mortality of patients with cardiogenic shock complicating ST elevation acute myocardial infarction (CS-STEMI) remains high despite the efforts to improve its management such as early revascularization. It maintains a poor prognosis with mortality exceeding 50%. Current knowledge about predictors of in-hospital mortality is limited.</p> <p><b>Aim:</b> To identify predictive factors of in-hospital mortality among patients with CS-STEMI</p> <p><b>Methods:</b> It is a single-center observational study including 113 consecutive patients with CS-STEMI between 1995 and 2016. Univariate and multivariate logistic regression analyses were performed to identify predictors of in-hospital mortality.</p> <p><b>Results:</b> The in-hospital mortality rate was 57.5% (<math>n = 65</math>). In univariate analysis, predictors of in-hospital mortality are: age &gt; 75 years (36.9% vs 18.8%; <math>p = 0.036</math>), arterial hypertension (49.2% vs 22.9%; <math>p = 0.004</math>), diabetes (58.5% vs 39.6%; <math>p = 0.047</math>), inaugural chest pain (83.3% vs 65.2%; <math>p = 0.032</math>), TIMI flow post PCI &lt; 3 (64.3% vs 27.3%; <math>p = 0.037</math>), persistent ST segment elevation after reperfusion (61.5% vs 37.9%; <math>p = 0.05</math>), clearance of creatinine &lt; 60ml/min (79.6% vs 55.8%; <math>p = 0.014</math>), failure of the reperfusion strategy (72.1% vs 27.9%; <math>p = 0.013</math>).</p> <p>Multivariate analysis identified three independent factors related to CS-STEMI mortality: inaugural chest pain (OR = 3.1, CI = 1.09-8.85), clearance of creatinine &lt; 60ml/min (OR = 2.7, CI = 1.05-7.08), TIMI flow post PCI &lt; 3 (OR = 4.8, CI = 1.03-22.29).</p> <p><b>Conclusion:</b> The study showed that inaugural chest pain, creatinine clearance &lt; 60ml/min, TIMI flow post PCI &lt; 3 are independent indicators of in-hospital death among patients with CS complicating STEMI.</p>
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## Article

### English Title

One-year outcomes of unprotected left main PCI

### Category

Coronary Intervention

### English Abstract

**Introduction:** The localization of atheromatous disease on unprotected left main (UPLM) is frequent and associated with a poor prognosis. Its treatment was for a long time reserved for surgery. Technical improvement in coronary angioplasty has modified our strategy in this type of lesion.

objective.

**Aim:** The aim of this study was to identify one-year results in terms of MACE (cardiac death, myocardial infarction and target lesion revascularization).

**Methods:** This is a retrospective and prospective study conducted in the cardiology department of the Tunis Military Hospital between January 2012 and December 2016. 104 patients were selected to participate in the study. Outcomes were the rate of MACE at one-year.

**Results:** At the end of a 12-month follow-up, the rate of cardiac death was 4.8% (5 patients). The probability of survival at 12 months was estimated at 94%. The MACE rate was 12.5%, mainly composed of restenosis on the LM in 8.6% of cases. Predictors of MACE occurrence were the presence of a cardiogenic shock at admission and angioplasty with 2 stents.

**Conclusion:** the results UPLM disease angioplasty are encouraging and comparable to other randomized studies and registries.

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## Article

### English Title

Clinical and technical characteristics of patients treated with PCI on unprotected left main disease

### Category

Coronary Intervention

### English Abstract

**Introduction:** The localization of atheromatous disease on unprotected left main (UPLM) is frequent and associated with a poor prognosis. Its treatment was for a long time reserved for surgery. Technical improvement in coronary angioplasty has modified our strategy in this type of lesion.

**Objective:** The aim of this study was to identify clinical and technical characteristics of patients treated with PCI on unprotected LM.

**Methods:** This is a retrospective and prospective study conducted in the cardiology department of the Tunis Military Hospital between January 2012 and December 2016. 104 patients were selected to participate in the study.

**Results:** the mean age of our population was  $63 \pm 10$  years with a sex ratio of 2.5. Diabetes was the most common risk factor with a prevalence of 71.2%. A history of coronary artery disease was found in 51% of our patients, of whom 28.8% had a history of MI. The procedure indications of angiography were mainly ACS in 73% of cases, including 17% of STEMI. LV dysfunction was found in 31% of cases. Distal LM involvement was present in 71% and associated three vessel diseases was found in 16.3% of cases. The SYNTAX score I was of low and intermediate complexity in 93.3%. IVUS was performed in 12.5% of patients. Of the seventy-nine patients with distal LM stenosis, the use of the one stent technique was performed in 67% of cases. Two techniques allowed to achieve a good result with 2 stents: the TAP and the Minicrush. The POT rate was 60% and the final kissing balloon was 63%. The stents used were 99% drug eluting stents and only one case of bare metal stent.

**Conclusion:** As we have seen, our population has a very high cardiovascular risk which explains the poor prognosis and the anatomic complexity of the atheromatous disease.

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## Article

**English Title**

Progression of intracoronary hematoma assessed by IVUS: A Case Report

**Category**

Case report

**English Abstract**

**Background:** Spontaneous coronary artery dissection (SCAD) is a rare situation, responsible for 2 to 5% of ACS. It concerns a particular population, mostly women with a low atherosclerotic risk factor burden. Certainly, under diagnosed because of the limited contribution of angiography. Intravascular imaging, particularly intravascular ultrasound (IVUS), provides more value for diagnosis and therapeutic follow-up.

**Case:** A 42-year-old male was admitted in the cardiology department of the Military Hospital for an acute chest pain with elevated troponin. He had no history of cardiovascular risk factors and no coronary artery disease in the family. The results of cardiovascular examination were normal. A 18-lead electrocardiogram (ECG) (Figure 1) and a transthoracic echocardiogram were recorded without abnormalities. Coronary angiography (CAG) was performed and showed an intermediate stenosis of the LAD (Figure 2). Subsequently, IVUS confirms the presence of a non-circumferential hematoma in the mid-vessel of the LAD without severe stenosis (Figure 3). In view of the moderate stenosis, percutaneous coronary intervention (PCI) was not undertaken and medical management was recommended, with beta-blockade and anti-platelet therapy.

One month later after the discharge, the patient was readmitted for a transient STEMI (Figure 4). In a repeat CAG control, the hematoma increased in size becoming responsible for severe stenosis at its level without flow delay as shown in (Figure 5). IVUS examination showed near-circumferential hematoma extending deep into the media with a 2.4mm<sup>2</sup> MLA (Figure 6). The final decision was to perform PCI of the LAD by drug eluting stent (DES) 3.5 × 22 mm with a good result.

**Conclusion:** SCAD must be suspected in case of young woman with low or no atherosclerotic risk factors, in man it is exceptionally described. intracoronary imaging should be systematically proposed for diagnostic and therapeutic purposes.

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## Article

### English Title

Is there an improvement in outcomes with IVUS-guided PCI in the unprotected left main after 12 months?

### Category

Coronary Intervention

### English Abstract

**Background:** Intravascular Ultrasound (IVUS) guided PCI for unprotected left main (UPLM) improves clinical outcomes.

**Objectives:** Considering the minimal luminal area MLA of 5,9; we want to investigate if there is an improvement in clinical outcomes between those who were proceeded with IVUS and others without IVUS.

**Methods:** This retrospective study conducted in the military hospital of Tunis between January 2012 and December 2016. One hundred four patients with UPLM were included and divided into two groups (IVUS-guided group and no IVUS-guided group). The occurrence of major adverse cardiac events (MACE): cardiac death, myocardial infarction, or target lesion revascularizations) were recorded after 12 months of follow-up.

**Results:** The mean age of our population was  $61 \pm 10$  with a sex ratio of 2.5. Thirteen patients (25%) were proceeded on the unprotected left main with IVUS. The incidence of MACE in the IVUS-guided group was 23% (3 patients) and 11% (10 patients) in the other group without any significant difference ( $p = 0.2$ ).

**Conclusion:** After 12 months follow-up we have not seen any clinical improvement with IVUS-guided PCI in UPLM. A longer follow-up period could be proposed.

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## Article

### English Title

Arrhythmogenic right ventricular dysplasia: Echocardiographic aspects

### Category

Other

### English Abstract

**Background:** Arrhythmogenic right ventricular dysplasia (ARVD) is a rare inherited cardiomyopathy, clinically characterized by life-threatening ventricular arrhythmias. Diagnosis is often difficult. Transthoracic echocardiography (TTE) has a great contribution especially with the advent of novel techniques. The aim of our work was to describe the echocardiographic features of ARVD, and to evaluate the contribution of TTE in the diagnosis and screening for this disease.

**Methods:** This is a retrospective, mono-centric, descriptive study including 10 cases of ARVD diagnosed according to the criteria of the Task Force, in the Cardiology Department of the Farhat Hached University Hospital in Sousse, between 2000 and 2017.

**Results:** The mean age of our patients was  $36.1 \pm 16.85$  years old. The sex ratio was 1. A family history of ARVD was found in 3 patients and a family history of sudden cardiac death was noted in 4 cases. The most common clinical signs were palpitations (5 cases), lipothymia (3 cases), and heart failure (3 cases). Ventricular arrhythmias, were present in 60% of the patients. Negative T wave was found in 8 cases, mainly in the V1 to V3 derivations. One patient had an epsilon wave. All patients had at least four dilated right ventricular (RV) diameters. Outflow diameters were pathological in almost 100% of cases with a median RVOT prox 1 at 35mm [33–39.25], median RVOT prox 2 at 37mm [36–39.67] and median RVOT distal at 31mm [30–34.25]. The median RVD1 was 43mm [42–46.50], while the median RVD2 was 38.5mm [36.75–41.75]. For RVD3, only 2 patients had dilated diameter. Localized hypokinesia was noted in 3 cases, and diffuse hypokinesia in one patient. The study of TAPSE in lateral position revealed abnormalities in 8 patients with a median value of 15mm [12–16.75]. The peak systolic velocity (S'wave) was decreased in only 6 patients, but the median value was 9.3 cm/s [6.5–10]. Median RV fractional area change was 25% [17.75–30.75]. Only 2 patients had pulmonary arterial hypertension at 40 and 50 mmHg. Left ventricular (LV) study showed severe dysfunction in one patient (LVEF = 35%).

**Conclusion:** The results of our study confirmed that all patients with ARVD had an RV dilatation, but they also had other abnormalities not included in the Task Force diagnostic criteria. These new parameters (TAPSE, S'wave, strain, 3D echocardiography) must be validated by further multi-centric studies.

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