Ischémie myocardique et ANOCOR

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PARIS NORD VAL DE SEINE
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ASSISTANCE PUBLIQUE HÔPITAUX DE PARIS

16 mars 2018

Ischémie myocardique et ANOCOR

- ANOCOR droites ou gauches avec trajet interartériel
  ischémie myocardique peu fréquemment documentée

- ANOCOR avec connexion dans l'artère pulmonaire
  ischémie myocardique fréquemment documentée

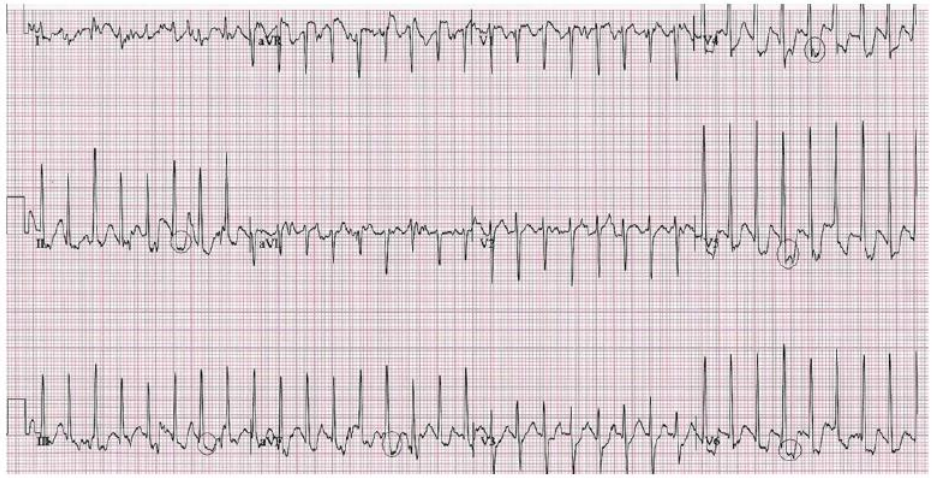
Diagnostic de l'ischémie myocardique

- Clinique : angor, dyspnée, palpitations, lipothymie, syncope, mort subite
- ECG repos : très rarement anormal
- ECG d'effort : sous-décalage ST, troubles du rythme ventriculaire, absence élévation/baisse PA
- Echocardiographie d'effort/dobutamine : anomalie cinétique segmentaire
- Scintigraphie myocardique d'effort : anomalie perfusion myocardique
- IRM cardiaque : séquelle de nécrose, zones de fibrose
- FFR (Fractional Flow Reserve) : quelle valeur-seuil ?
- Protocole spécifique (*SAD: saline/atropine/dobutamine*)

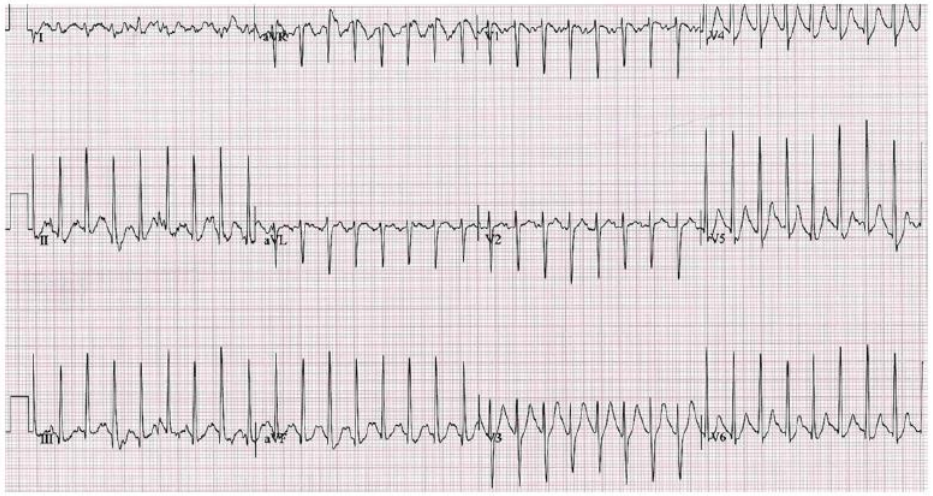
Reproductibilité des tests diagnostiques

Anomalous left coronary artery origin from the opposite sinus of Valsalva: Evidence of intermittent ischemia

Julie Brothers, MD,[a] Chris Carter, MD,[a] Michael McBride, PhD,[a] Thomas Spray, MD,[b] and Stephen Paridon, MD,[a] Philadelphia, Pa



13-year old boy
Evaluation of exercise-induced asthma
Exercise stress test
No symptoms during the test



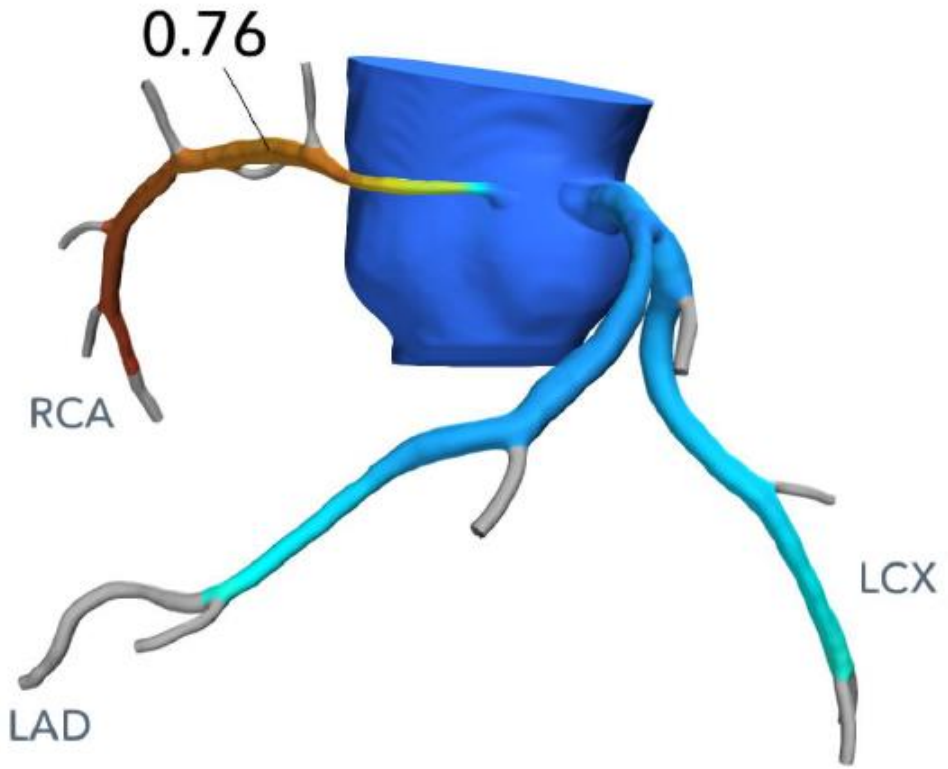
Cardiac MRI
Anomalous left coronary artery connexion
Interarterial course
New exercise stress

Journal of Thoracic and Cardiovascular Surgery 2010

FFR-CT

HeartFlow® FFR$_{CT}$

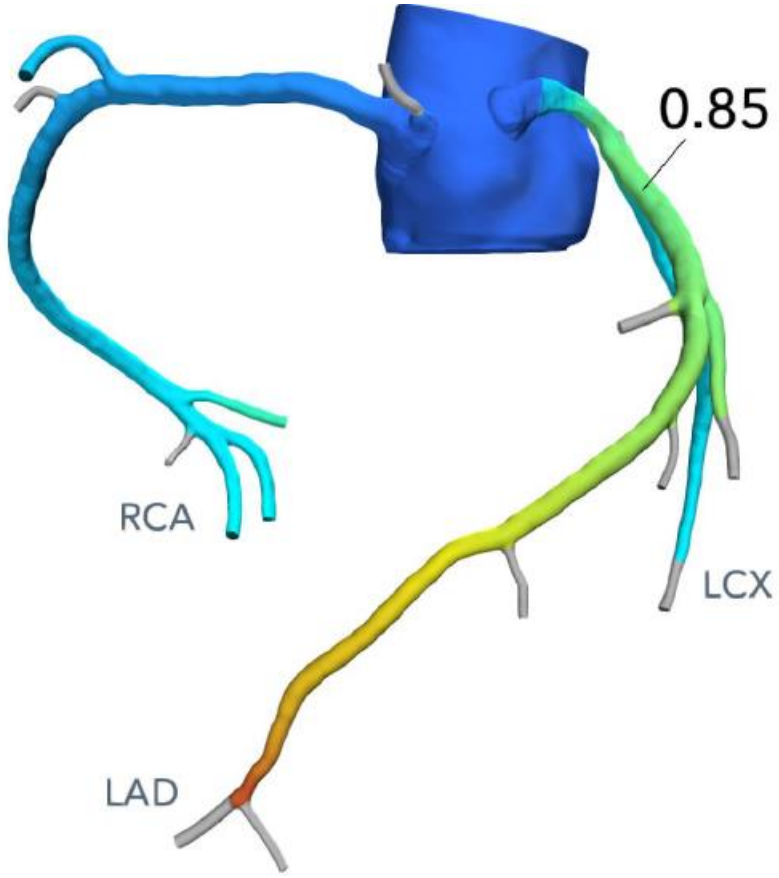
ANOCOR DROITE



FFR-CT

HeartFlow® FFR$_{CT}$

ANOCOR GAUCHE



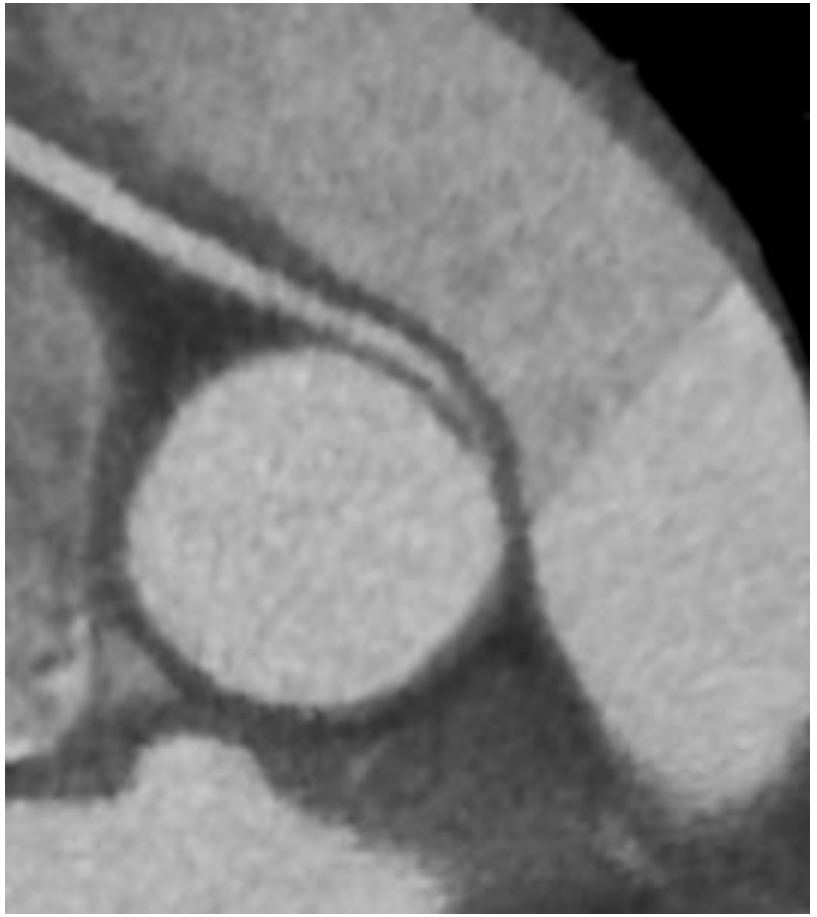
Mécanismes de l'ischémie myocardique

Facteurs anatomiques potentiels prédisposant à l'ischémie myocardique

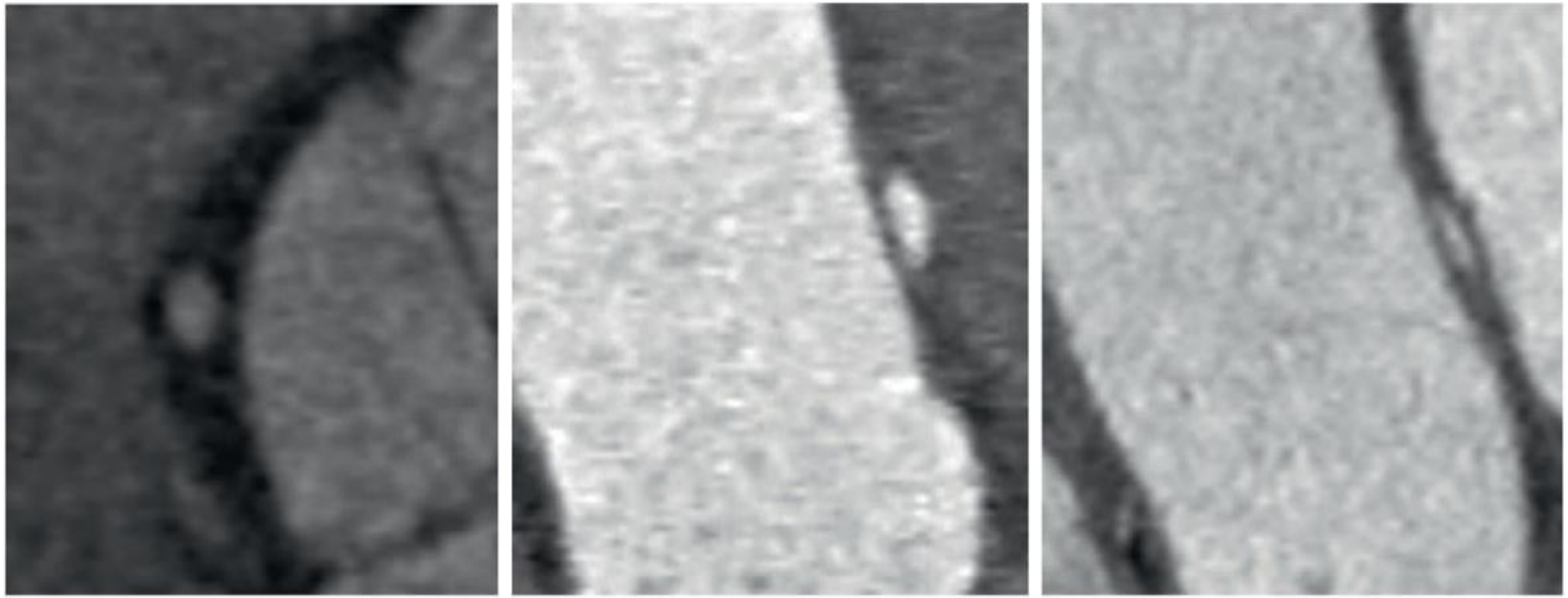
- Trajet interartériel
- Déformation artérielle
- Réduction de surface de l'ostium
- Trajet tangentiel à l'aorte
- Connexion proche d'une commissure
- Passage intramural aortique

Il reste inconnu si ces mécanismes agissent seuls ou en combinaison pour provoquer l'ischémie myocardique.

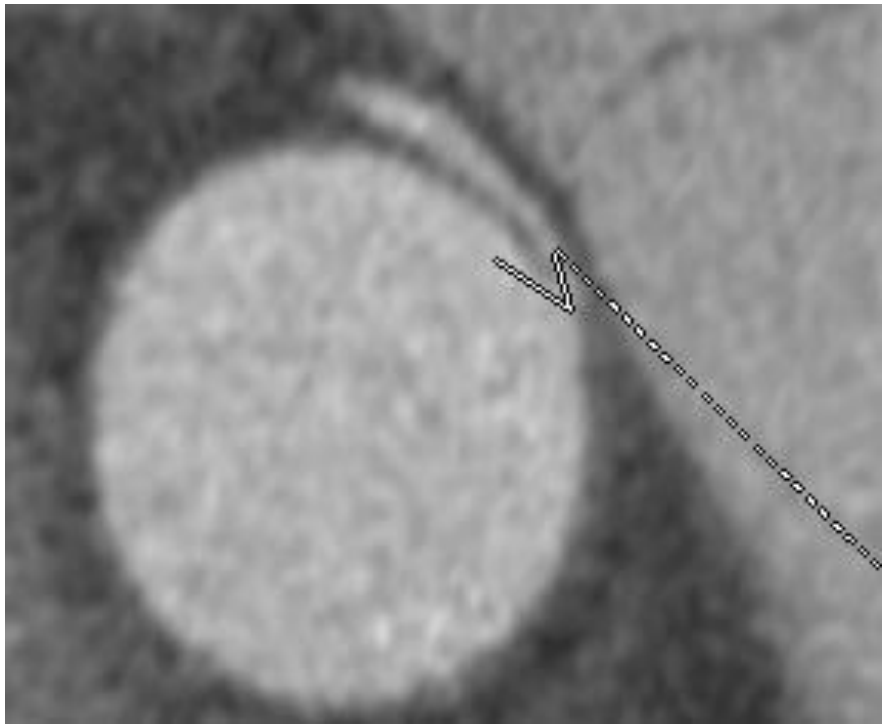
Trajet interartériel

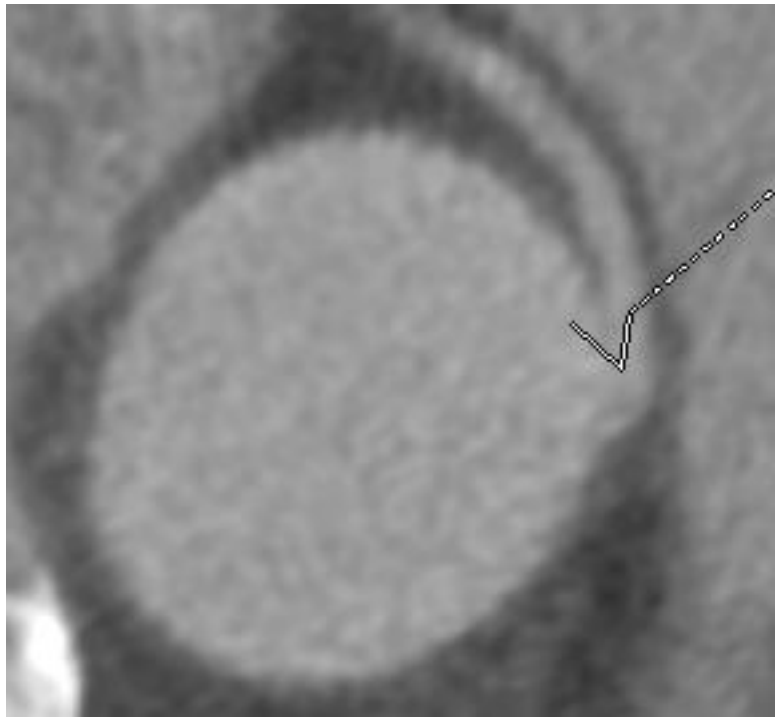


Déformation artérielle
Réduction de surface de l'ostium

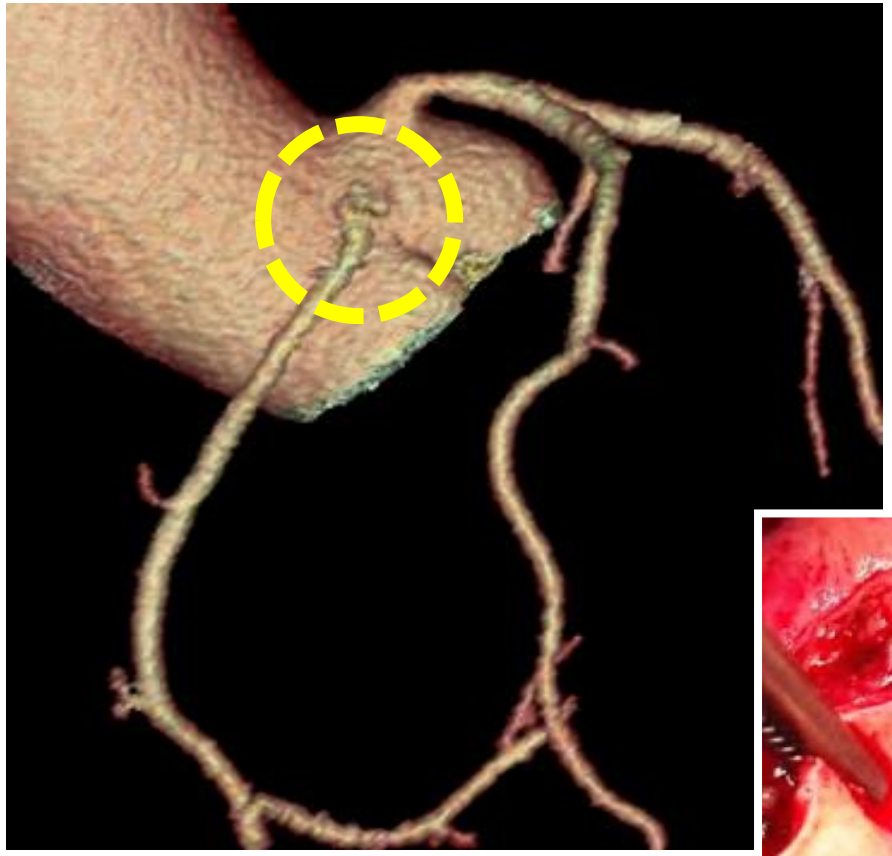


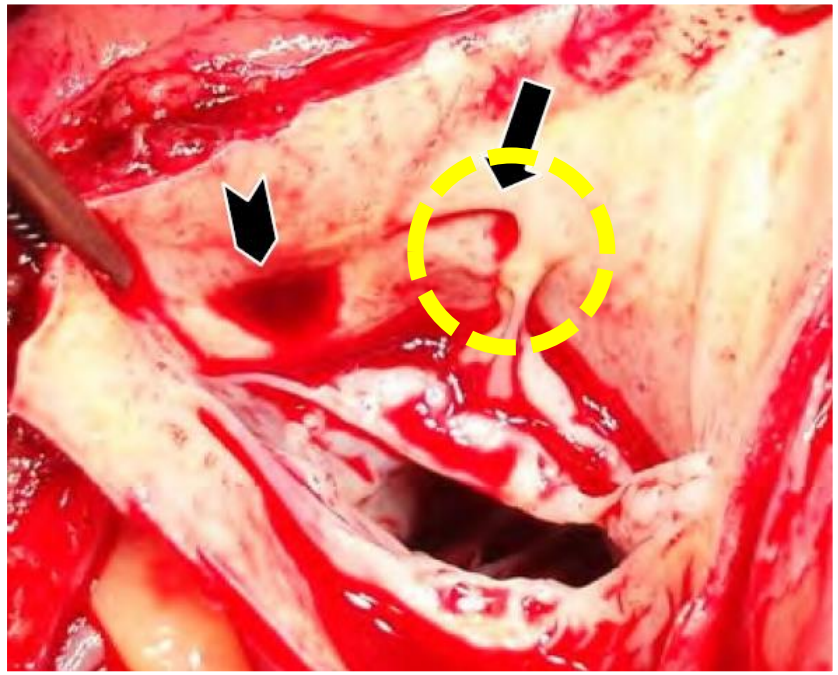
Trajet tangentiel à l’aorte





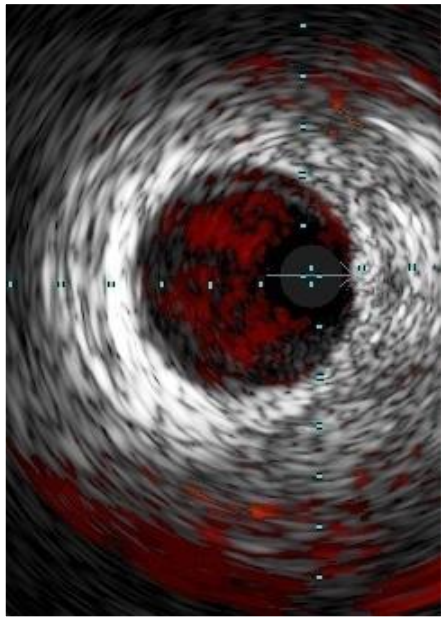
Connexion près d’une commissure



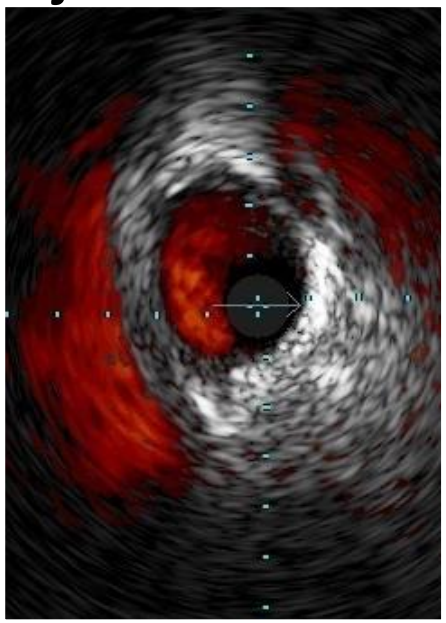


Passage intramural aortique

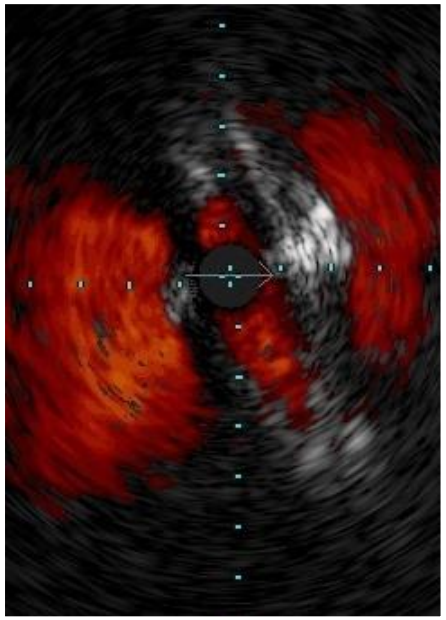
extramural



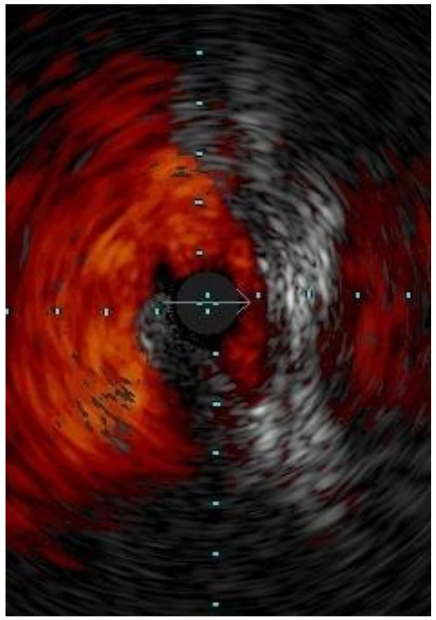
juxtamural



intramural



ostium



Hata Y Cardiovasc Pathol 2014

Mécanismes de l'ischémie myocardique

Facteurs non observés

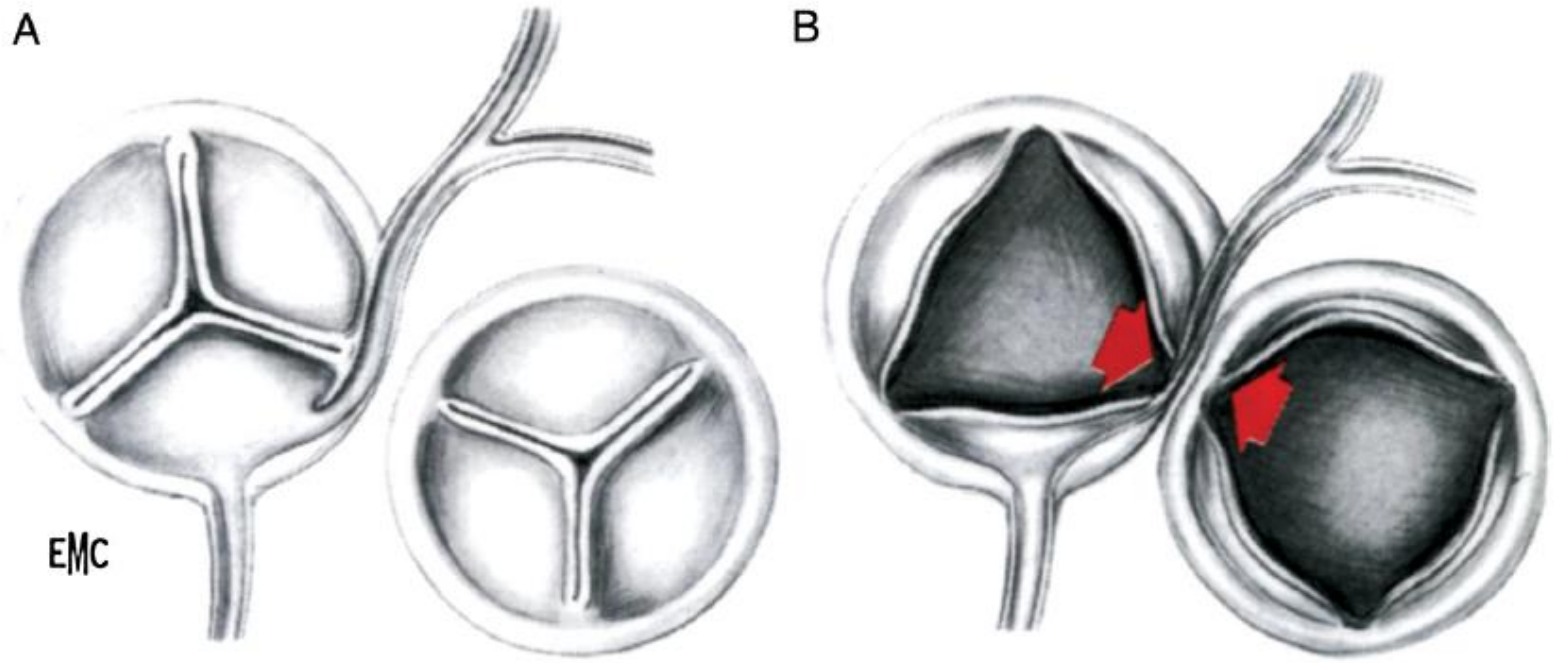
- Athérome coronaire
- Thrombose coronaire

Autres facteurs potentiels

- Spasme coronaire
- Dissection coronaire

Mécanismes de l'ischémie myocardique

compression extrinsèque dynamique à l'effort



Raisky O, Vouhé P. EMC 2007

démontré ?

Cardiac testing

Journal of the American College of Cardiology
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Published by Elsevier Science Inc.

Vol. 35, No. 6, 2000
ISSN 0735-1097/00/$20.00
PII S0735-1097(00)00566-0

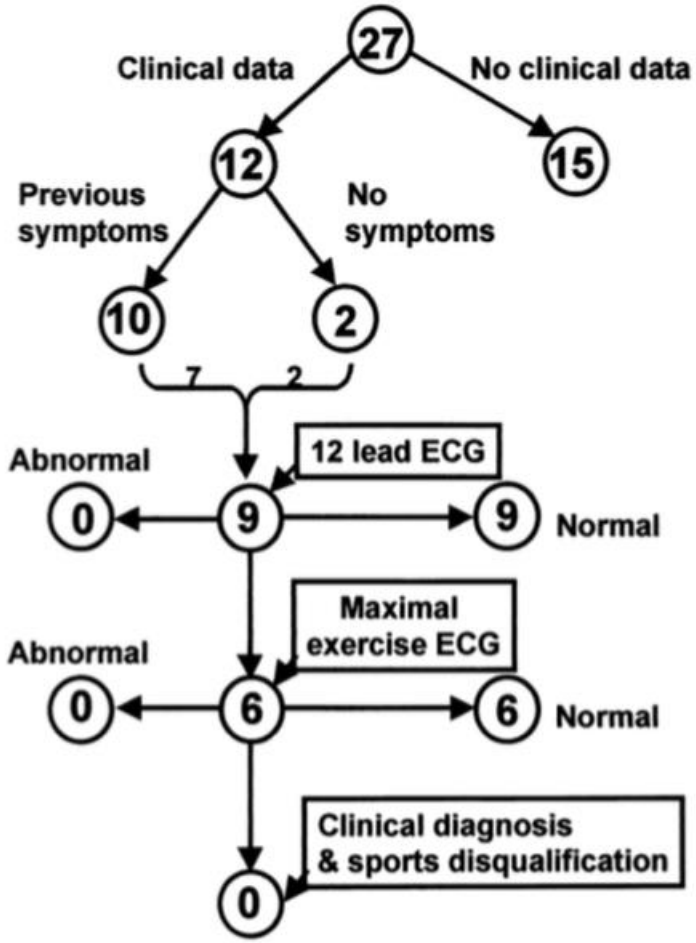
Clinical Profile of Congenital Coronary Artery Anomalies With Origin From the Wrong Aortic Sinus Leading to Sudden Death in Young Competitive Athletes

Cristina Basso, MD, PHD,* Barry J. Maron, MD, FACC,† Domenico Corrado, MD,‡ Gaetano Thiene, MD*

Padua, Italy and Minneapolis, Minnesota

Table 2. Demographic and Clinical Data in 12 Athletes With Wrong Sinus Coronary Artery Origin and Clinical Manifestations or Diagnostic Testing During Life

Age at Death	Gender	Nation	Race	Sport	Level	Site	Activity	Circumstances of Death	Prior Symptoms	Time From Symptoms to Sudden Death
11	M	Italy	W	Soccer	JHS	Field	Game	During effort	No	—
12	M	U.S.	B	Basketball	JHS	Field	Practice	During effort	Chest pain	7 days
12	M	U.S.	W	Hockey	JHS	Hotel	Sedentary	After effort	Syncope*, chest pain*	15 mo
12	M	U.S.	B	Basketball	JHS	Field	Practice	During effort	Syncope*†	14 mo
14	M	Italy	W	Soccer	JHS	Field	Game	During effort	No	—
15	M	Italy	W	Soccer	JHS	Field	Game	During effort	Syncope*	11 mo
15	F	U.S.	W	Tracksprint	HS	Field	Practice	During effort	Dizziness, palpitations*	15 mo
15	M	U.S.	B	Basketball	JHS	Field	Practice	During effort	Syncope†, chest pain	24 mo
16	M	U.S.	B	Basketball	HS	Field	Game	During effort	Chest pain*	8 mo
22	M	Italy	W	Soccer	Pro	Field	Game	During effort	Palpitations	12 mo
29	M	Italy	W	Rugby	Pro	Field	Practice	During effort	Palpitations	13 mo
32	F	Italy	W	Running	Pro	Field	Game	During effort	Chest pain*	9 mo



ACC.18
67th Annual Scientific Session & Expo

The Leeds Teaching Hospitals NHS
NHS Trust

Sudden Cardiac Death and Aborted SCD in Patients with Anomalous Aortic Origin of a Coronary Artery (AAOCA): A Comprehensive Review of the Literature

Dr Hunain Shiwani, BMBS
Department of Radiology
Leeds Teaching Hospitals NHS Trust
12th March 2018

ACC.18
67th Annual Scientific Session & Expo

NHS

Cardiac Testing

200 total (73 aborted, 127 SCD*)
71% male
Median: 17 years [IQR: 13-24]

* 98% with autopsy

Stress Test	Before SCD / aSCD		After aSCD	Total
	Normal	Abnormal	**Normal**	13
	10	2	**1**	

85% Negative (n=11/13)

ACC/AHA 2008 Guidelines for the Management of Adults With Congenital Heart Disease

8.5. Recommendations for Congenital Coronary Anomalies of Ectopic Arterial Origin

CLASS I

3. Surgical coronary revascularization should be performed in patients with any of the following indications:
   a. Anomalous left main coronary artery coursing between the aorta and pulmonary artery. (*Level of Evidence: B*)
   b. Documented coronary ischemia due to coronary compression (when coursing between the great arteries or in intramural fashion). (*Level of Evidence: B*)
   c. Anomalous origin of the right coronary artery between aorta and pulmonary artery with evidence of ischemia. (*Level of Evidence: B*)

J Am Coll Cardiol 2008

Expert consensus guidelines: Anomalous aortic origin of a coronary artery

Julie A. Brothers, MD,[a] Michele A. Frommelt, MD,[b] Robert D. B. Jaquiss, MD,[c] Robert J. Myerburg, MD,[d] Charles D. Fraser, Jr, MD,[e] and James S. Tweddell, MD[f]

RECOMMENDATIONS ON TREATMENT

5. Individuals with AAOCA and symptoms of ischemic chest pain or syncope suspected to be due to ventricular arrhythmias, or a history of aborted SCD, should be activity restricted and offered surgery. *(Class 1; Level of Evidence B—supporting references*[6,18,21-23,29,32,40,58,72,82,105,113,123,124]*)*

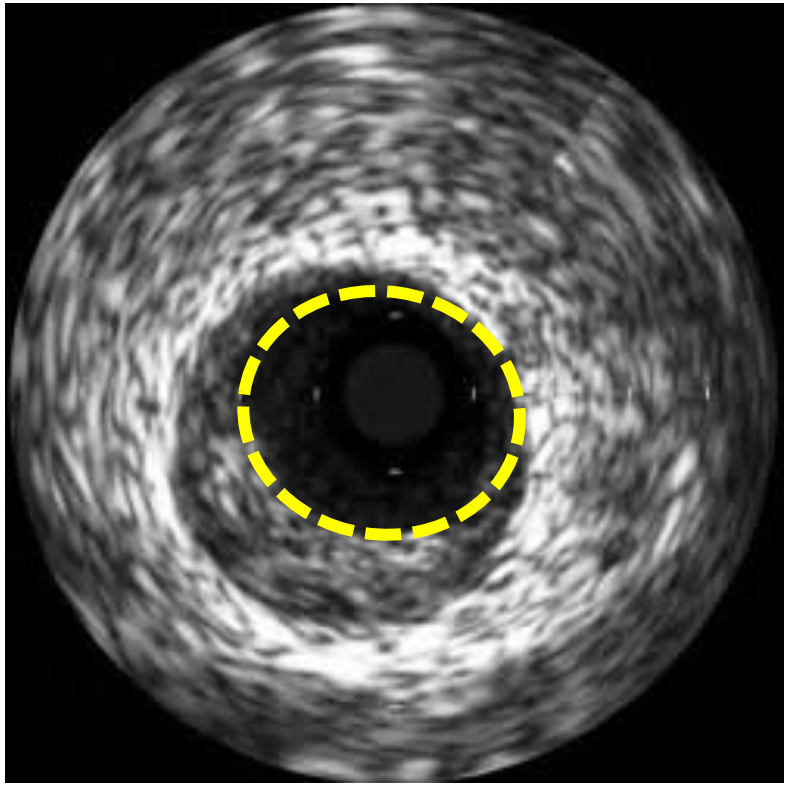
J Thorac Cardiovasc Surg 2017;153:1440-57

Ischémie myocardique, ANOCOR et âge

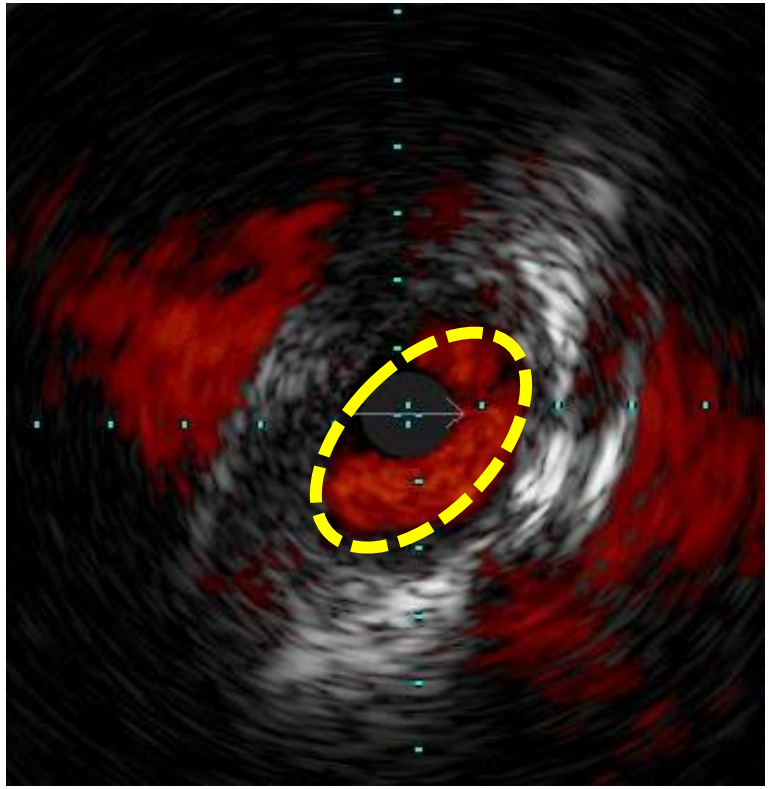
	< 35 ans	> 35 ans
mort subite	non rare	très rare
signes cliniques	rares	non rares
ischémie myocardique documentée	très rare	non rare

Ischémie myocardique et réduction de surface physiopathologie

maladie coronaire



anomalie coronaire



Conclusions
Ischémie myocardique et ANOCOR

- La physiopathologie n'est basée que sur des hypothèses.
- La prévalence est basse même dans les formes anatomiques à haut risque.
- Les tests diagnostiques classiques sont-ils adaptés ?
- La valeur prédictive négative des tests de stimulation est faible.
- La relation entre mort subite et ischémie myocardique n'est pas claire.
- Le grand challenge est l'optimisation de l'évaluation du risque individuel d'ischémie myocardique afin de proposer une prise en charge adéquate pour chaque cas.

Merci pour votre attention

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