Cas d'anomalie de naissance coronaire
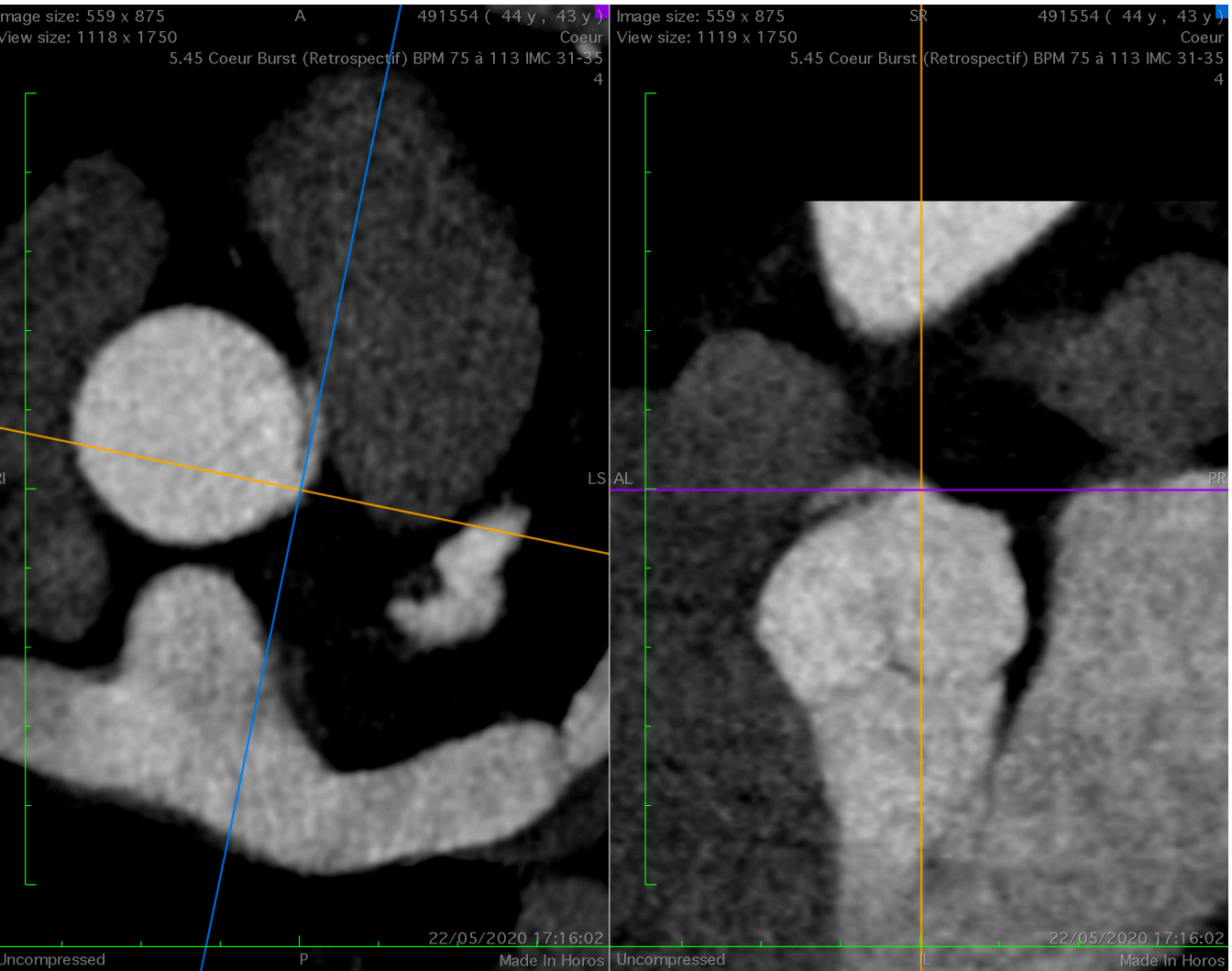
Julien Adjedj

Saint Laurent du Var

Cas clinique: Patient de 43 ans

Cas clinique: Patient de 43 ans

1er avis chirurgical: Chirurgie d'emblée avec reconstruction coronaire par un patch veineux
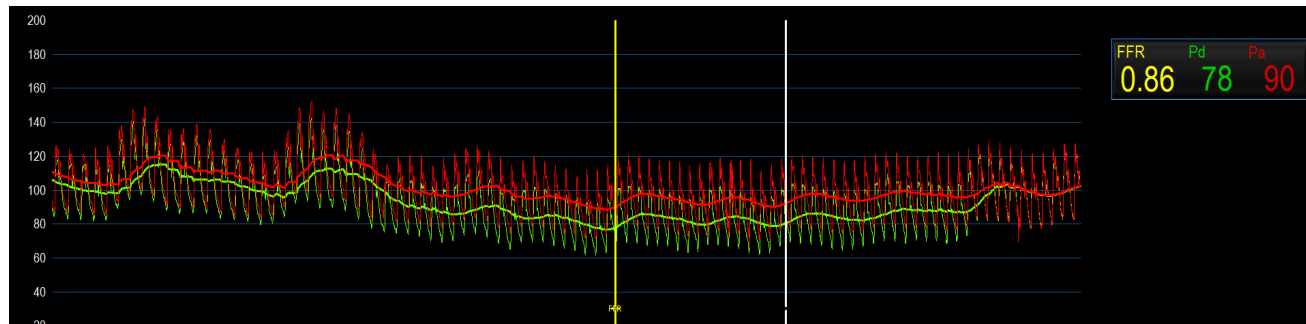
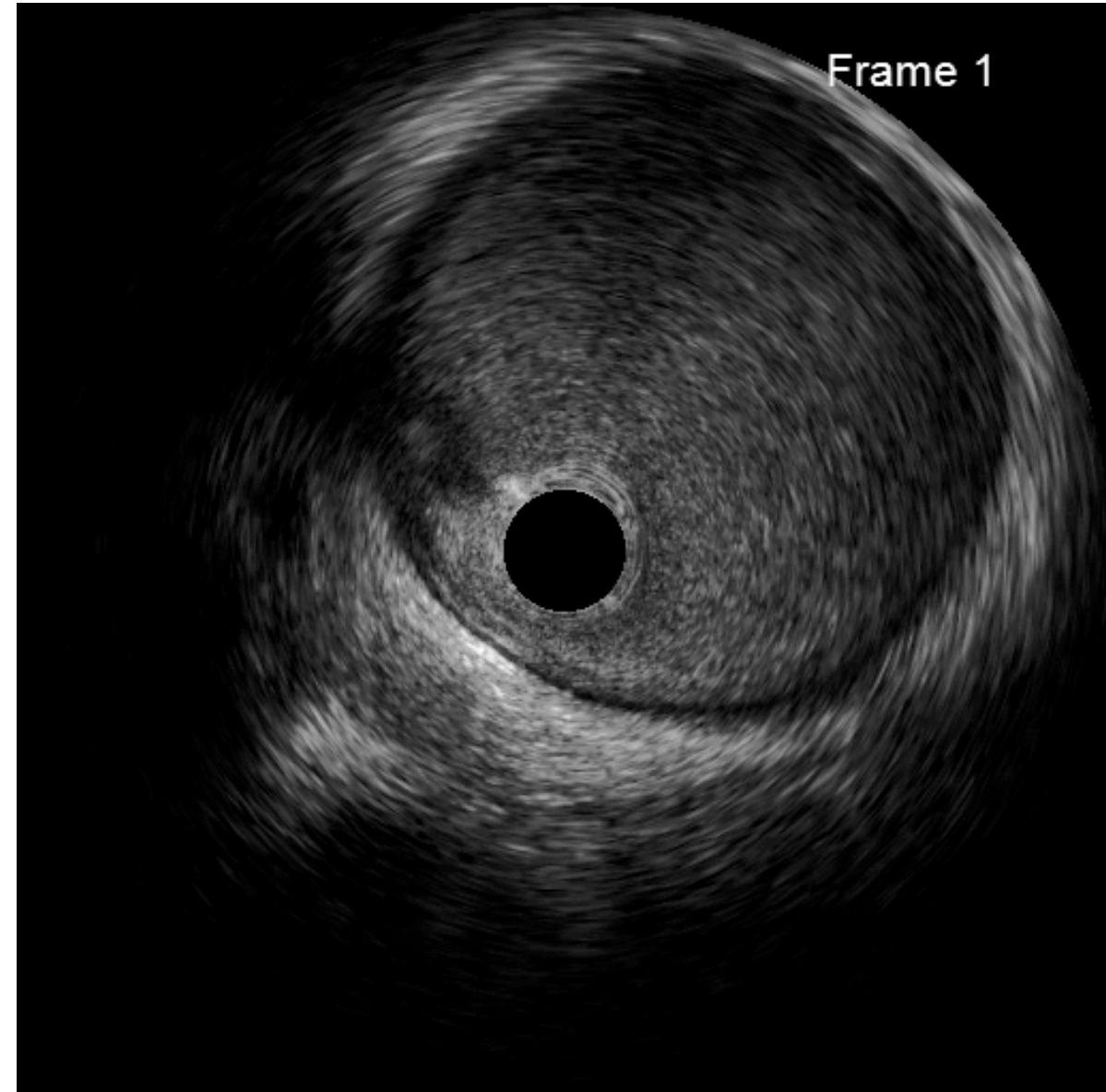**2eme avis chirurgical: traitement médical**

3eme avis (moi) refaire la coro (non disponible) avec FFR et IVUS

Coronarographie

Coronarographie

Frame 1

FFR Pd Pa
0.86 78 90

Staff spécialisé

- Que faire?

Groupe de travail multidisciplinaire ANOCOR
Anomalies congénitales des artères coronaires
Pierre Aubry, Patrick Dupouy, Xavier Halna du Fretay
Fabien Hayfil, Jean-Michel Juliard, Jean-Pierre Laissy, Phalla Ou
Groupe Hospitalier Bichat-Claude Bernard, 75018 Paris

Docteur ADJEDJ
Double au Docteur TAPIA
06721 SAINT-LAURENT DU VAR cedex

Paris, le 20 août 2020

Cher Julien,

Staff spécialisé

scanner coronaire (mai 2020)
connexion coronaire gauche normale
connexion ectopique coronaire droite dans sinus gauche
déformation juxta-ostiale en fente
réduction de calibre juxta-ostiale > 50%
angle initial de connexion : 17° (< 30°)
trajet ectopique préaortique (appelé aussi interartériel)
passage intramural aortique certain
pas d'athérome significatif visible

coronarographie (avril 2020) avec imagerie endocoronaire et étude physiologique
connexion coronaire gauche normale
réseau coronaire gauche régulier
cathétérisme semi-sélectif coronaire droite
connexion ectopique coronaire droite dans sinus gauche
FFR : 0.86 sans adénosine IV

échographie endocoronaire : déformation juxta-ostiale en fente, rapport excentricité 2.4
mesures : juxta-ostiale 1.8x4.4 mm avec surface 6.5 mm2, à distance 4.8x5.0 mm avec surface 18.9 mm2 soit
réduction surface 65%
absence d'athérome coronaire

Staff spécialisé

- Que faire?

propositions selon nos connaissances actuelles et les recommandations en cours
pas de correction anomalie coronaire à ce stade
surveillance clinique
si symptomatologie d'effort résiduelle compatible avec un angor d'effort : proposer correction anomalie plutôt par angioplastie (âge > 30 ans)
*restriction recommandée activité physique sportive intensive : oui*

Epidemiologie

THE PRESENT AND FUTURE

STATE-OF-THE-ART REVIEW

Anomalous Aortic Origin of a Coronary Artery From the Inappropriate Sinus of Valsalva

Michael K. Cheezum, MD,[a,b] Richard R. Liberthson, MD,[c] Nishant R. Shah, MD, MPH, MSc,[d] Todd C. Villines, MD,[e] Patrick T. O'Gara, MD,[a] Michael J. Landzberg, MD,[f] Ron Blankstein, MD[a]
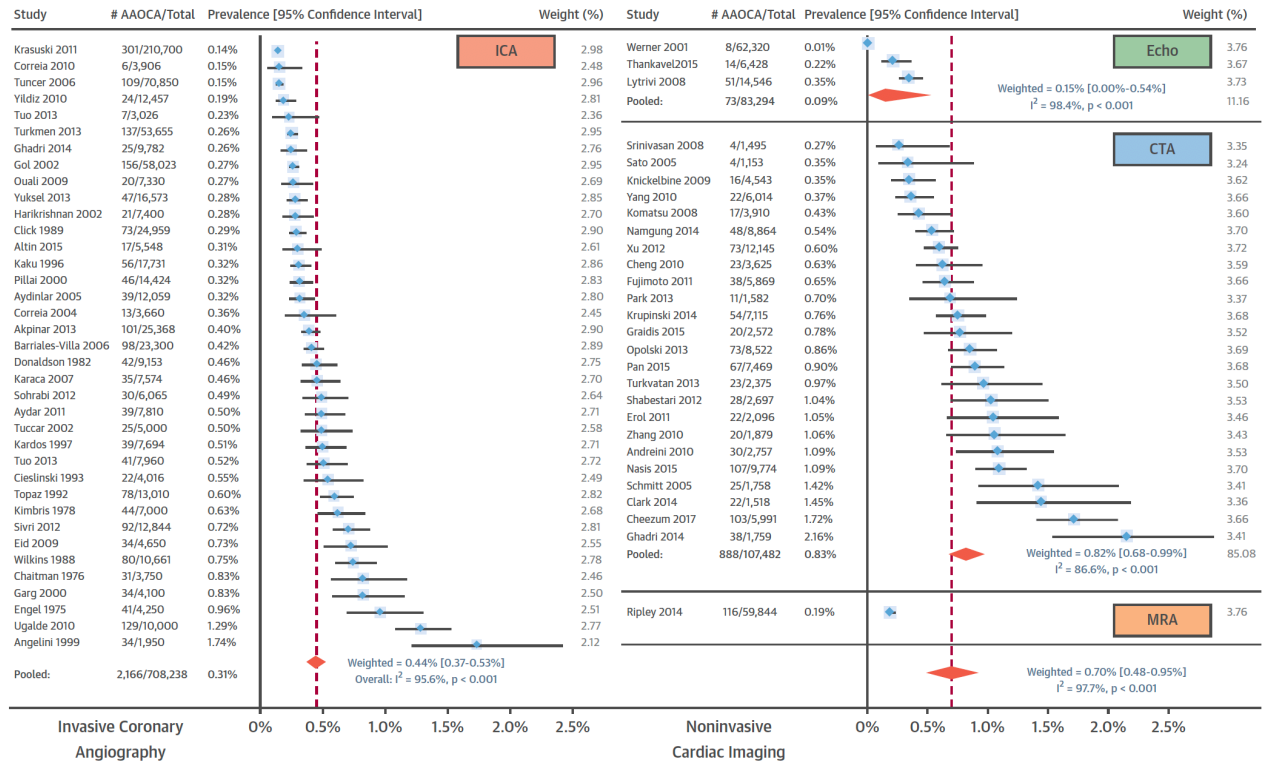
Angiographic data Types of coronary artery (n = 496)

Left main coronary artery, n (%)	60 (12.1)
LAD coronary artery, n (%)	27 (5.4)
Circumflex coronary artery, n (%)	236 (47.5)
Right coronary artery, n (%)	165 (33.2)
Other arteries, n (%)	9 (1.8)

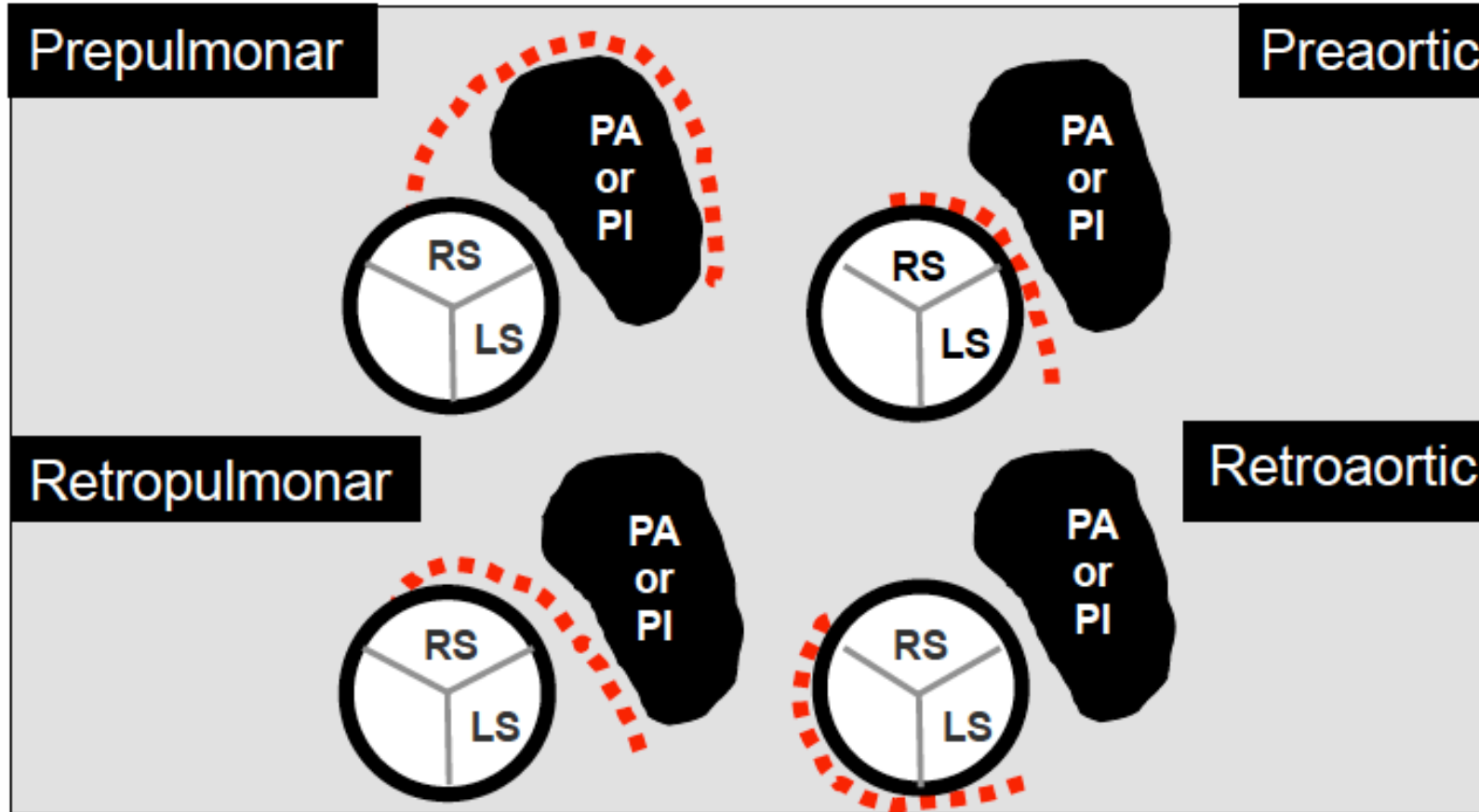LAD: left anterior descending

Types
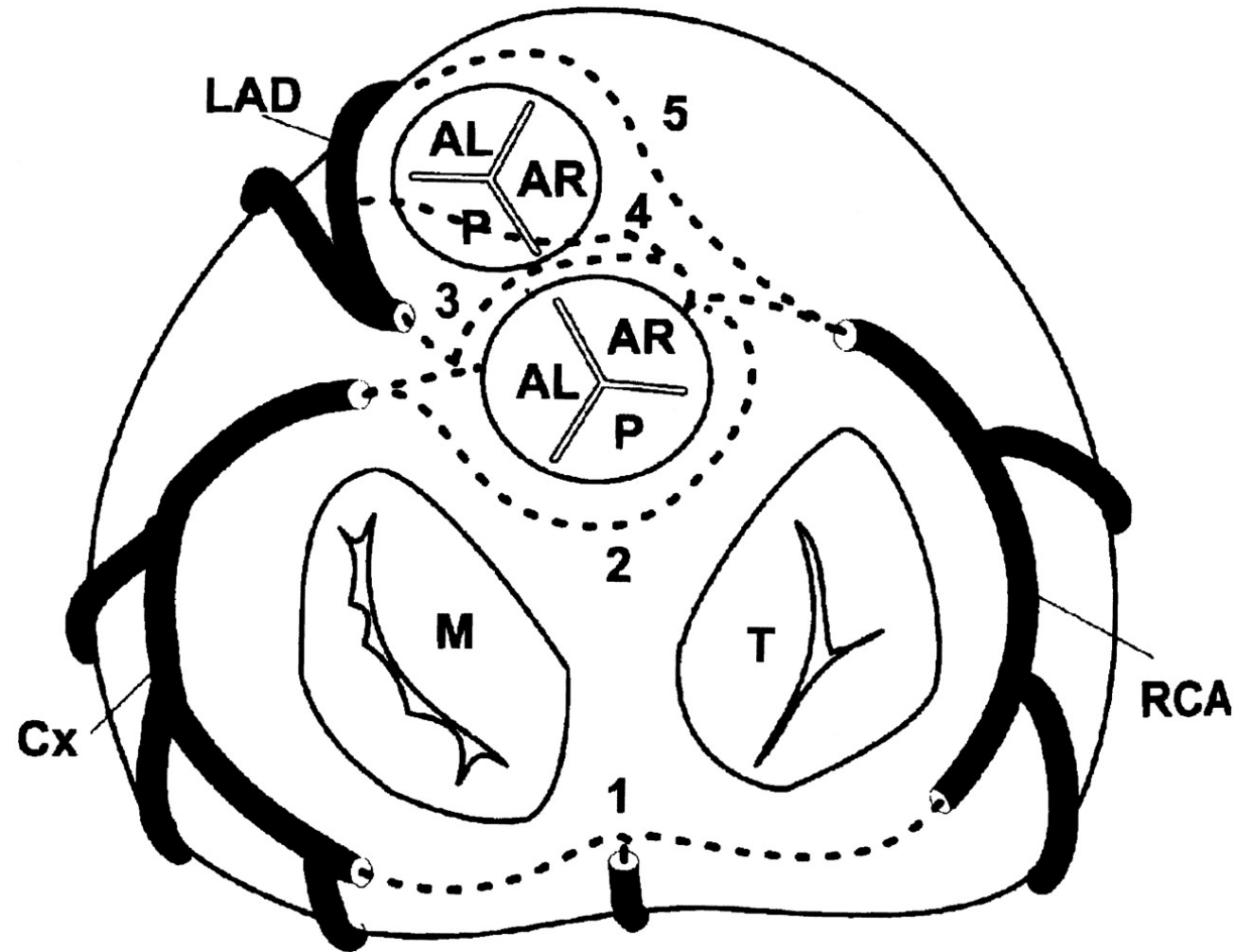
1, Retrocardiac; 2, retroaortic;
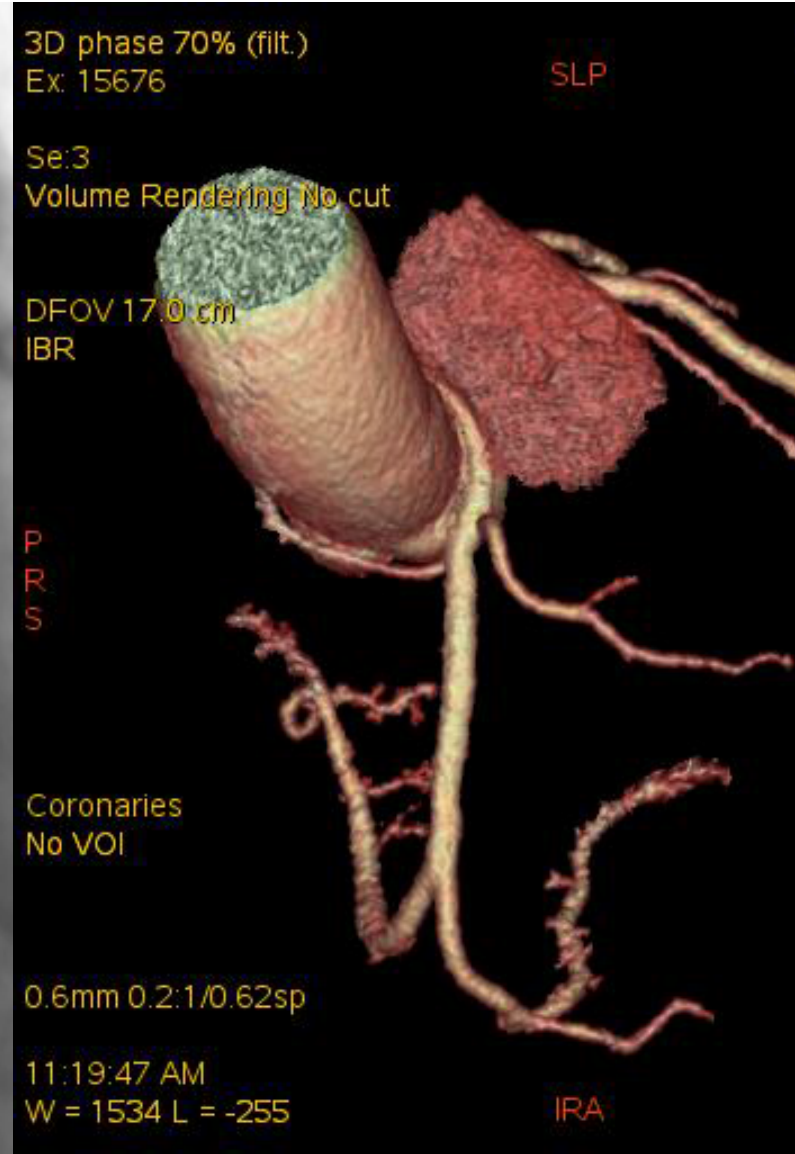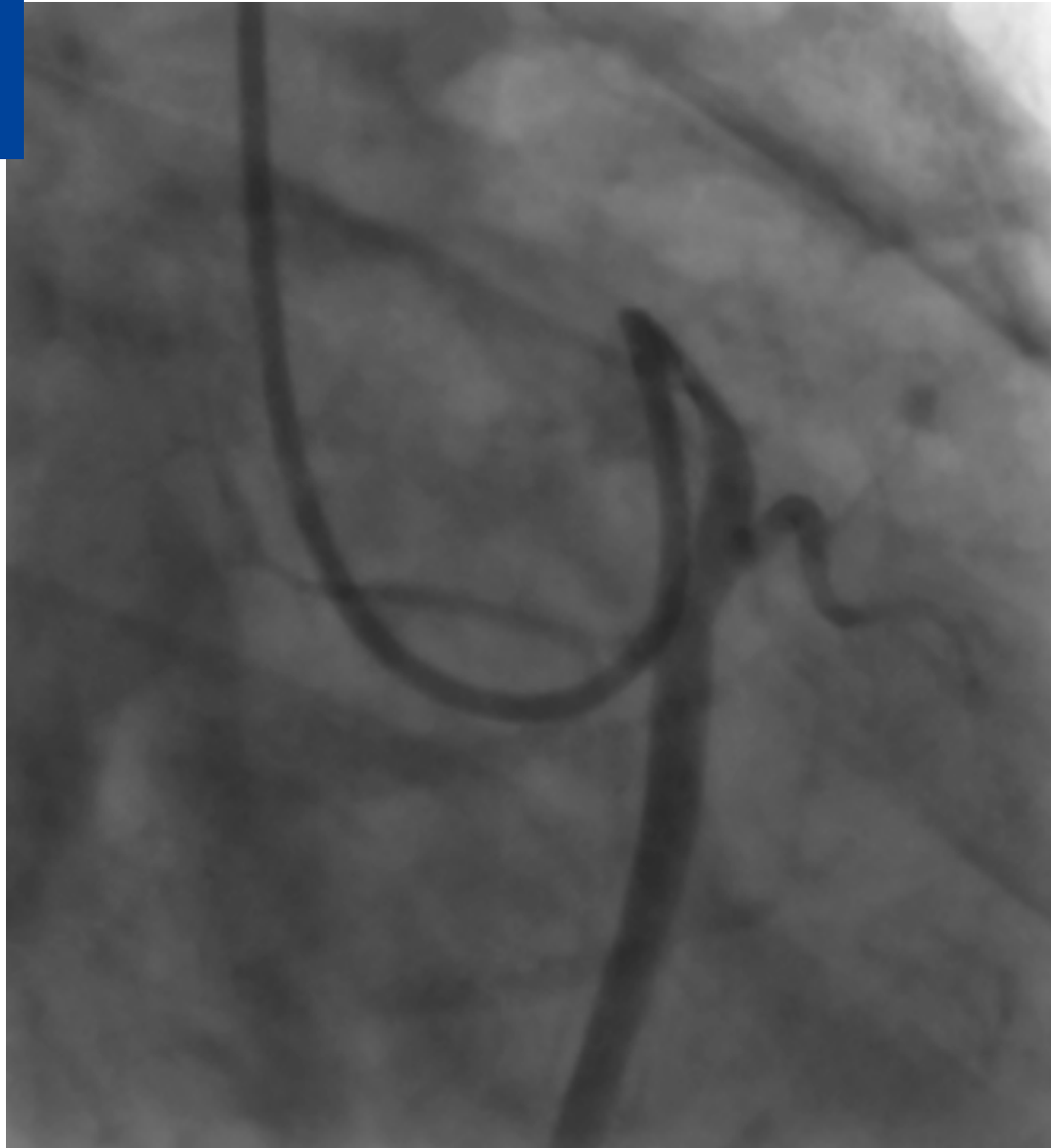3, preaortic, or between the aorta and pulmonary artery;
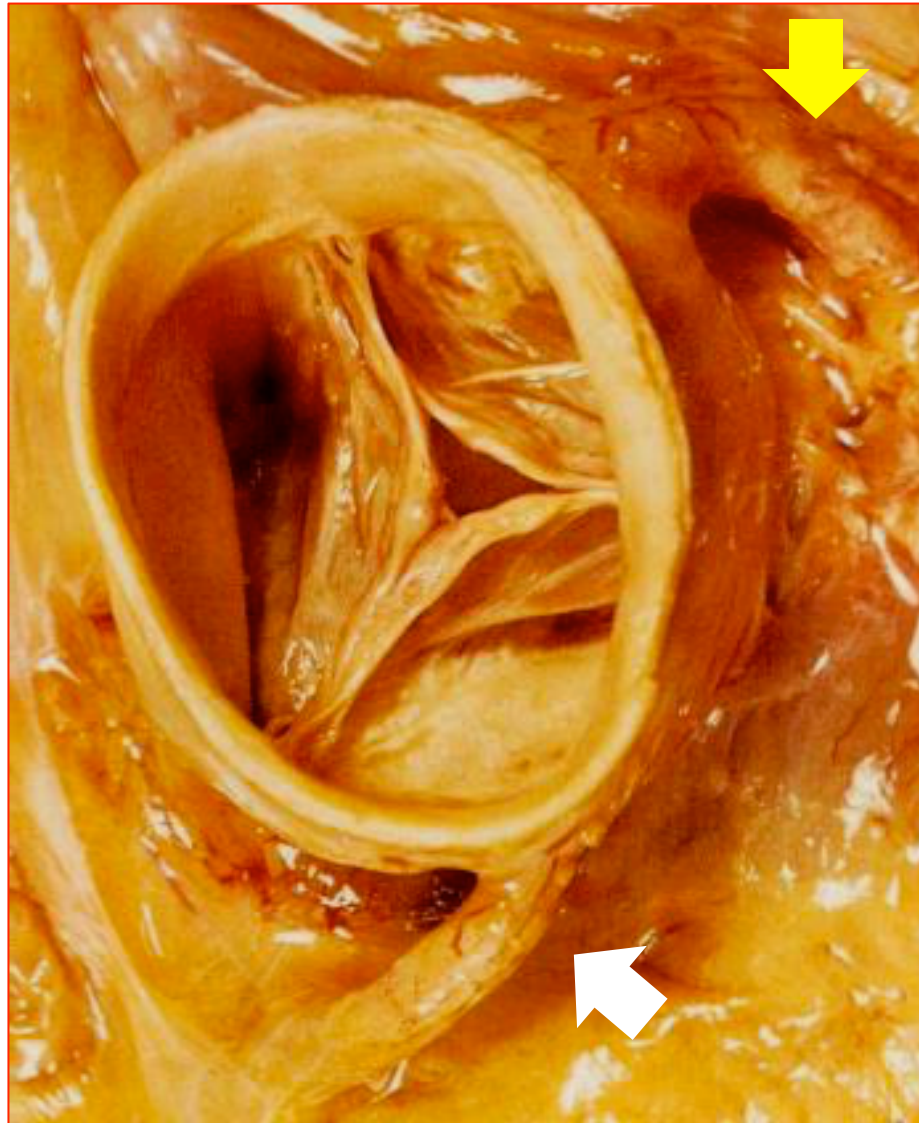4, intraseptal (supracristal); 5, prepulmonary (precardiac). *Paolo Angelini Circulation. 2007;115:1296-1305*

Types of initial course

PA: pulmonary artery, PI : pulmonary infundibulum
LS: left sinus, RS: right sinus
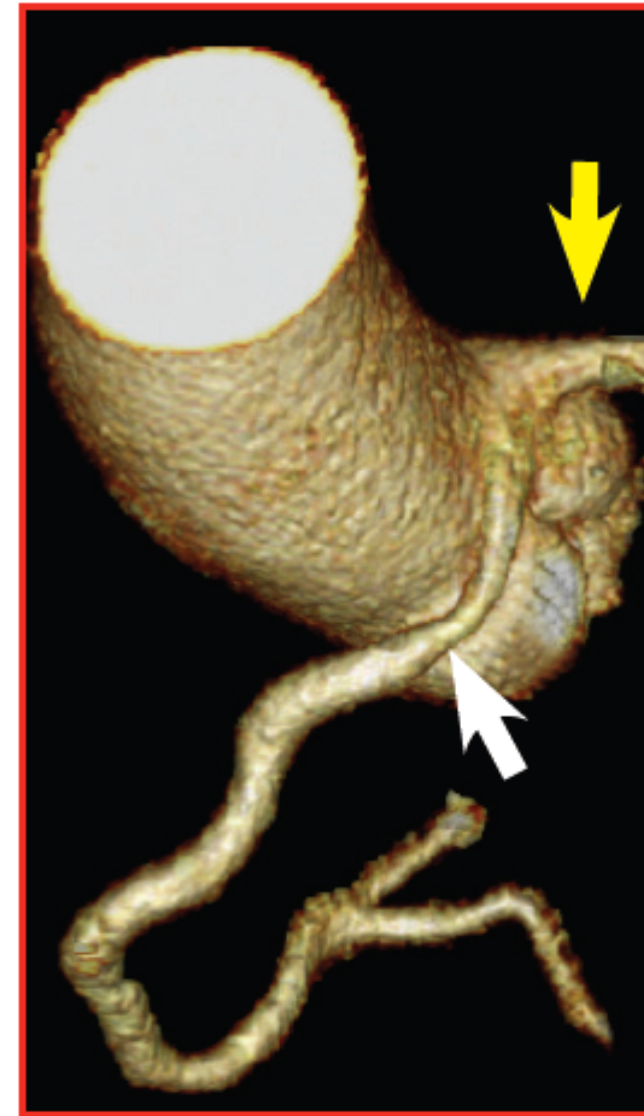
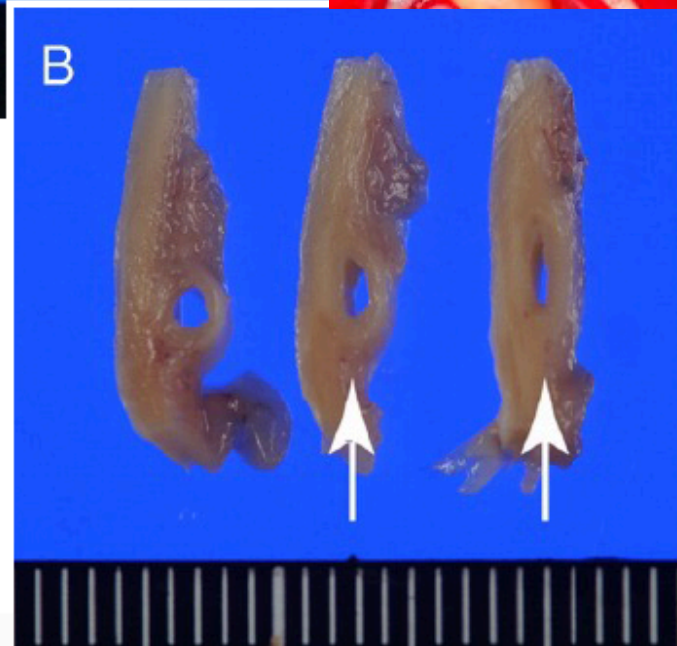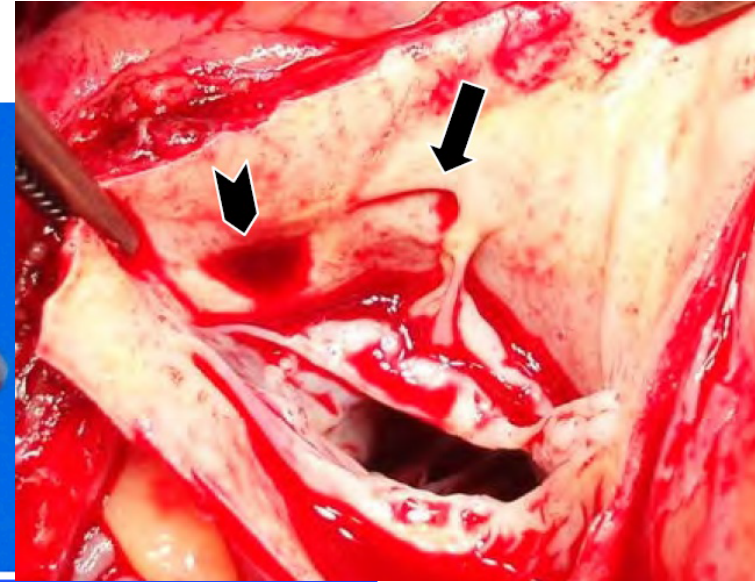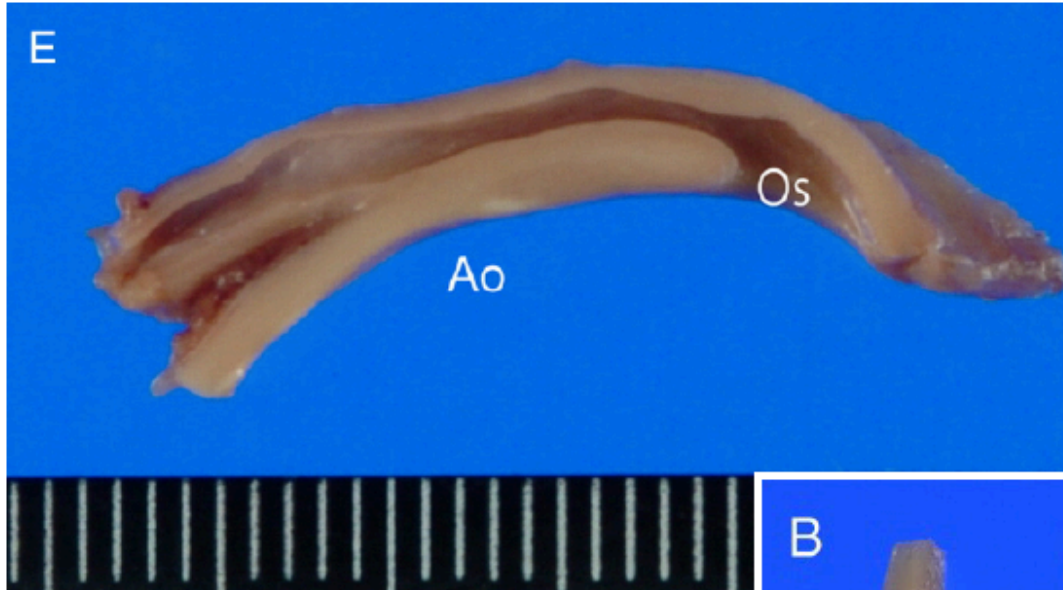*Pierre Aubry et al. Intech 2012*

RCA with preaortic course

Normal connection

Abnormal connection

Intramural pathway

Right ANOCOR with an intramural course
Hata Y et al.
Cardiovasc Pathol 2014

Etat de la littérature

Original Contribution

Feasibility of Quantitative Flow Ratio in Adult Patients With Anomalous Aortic Origin of the Coronary Artery With 5 Years of Clinical Follow-up

Julien Adjedj, MD, PhD[1,2]*; Fabien Hyafil, MD[3]*; Farhang Aminfar, MD[2]*;
Xavier Halna du Fretay, MD[4,5]; Fabien Picard, MD, MSc[6]; Patrick Dupouy, MD[7];
Jean-Michel-Juliard, MD[5]; Olivier Muller, MD, PhD[2]; William Wijns, MD, PhD[8];
Pierre Aubry, MD[5]; on behalf of the ANOCOR Investigators

Etat de la littérature

European Heart Journal - Cardiovascular Imaging Advance Access published January 27, 2016
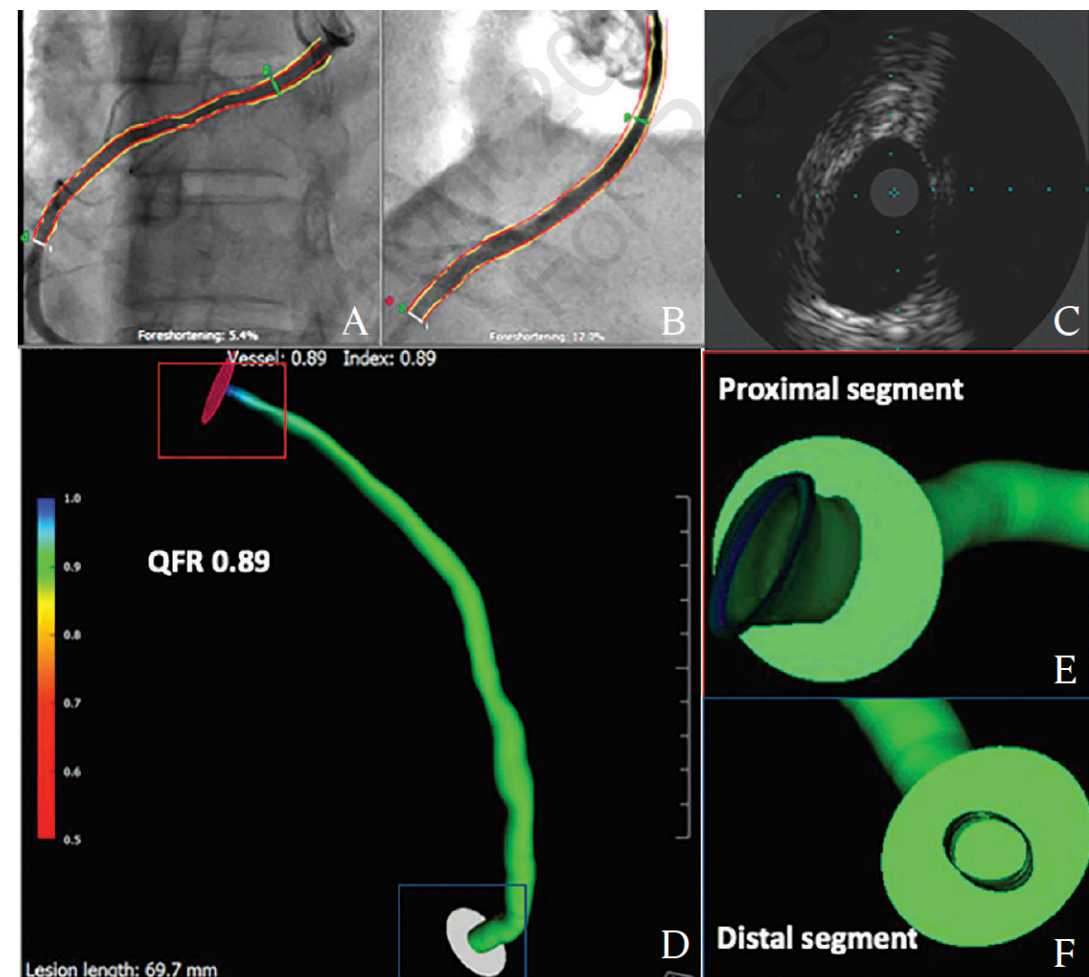
IMAGE FOCUS

doi:10.1093/ehjci/jev356

Coronary artery anomaly and evaluation by FFR computed tomography

Julien Adjedj*, Angela Ferrara, Martin Penicka, Carlos Van Mighem, and William Wijns

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Fractional flow reserve from computed tomography (FFRCT) provides a non-invasive functional assessment of the coronary tree with computed FFR. This imaging modality is particularly useful when invasive FFR measurements are difficult or contraindicated. An otherwise asymptomatic 70-year-old male patient presented with ventricular extrasystoles which were confirmed during exercise stress test. The patient underwent a coronary computed tomography angiography (CCTA). CCTA revealed an abnormal left main origin in the right anterior cusp close to the origin of the right coronary artery with moderate atherosclerosis including calcifications. Invasive coronary angiography showed this abnormality equally well, but wire-based functional evaluation was not performed due to safety considerations. From the CCTA data, virtual FFR evaluation (FFRCT) was computed. The FFRCT revealed a borderline abnormal virtual FFR value of 0.79 in the distal circumflex. However, since coronary anomalies have not been systematically evaluated by FFR, we performed an additional myocardial perfusion imaging test showing no significant myocardial ischaemia. As a result, the patient was discharged with optimal medical therapy. FFRCT is a novel non-invasive functional test providing both anatomical and functional evaluation of the coronary tree. These unique features allow to tackle difficult issues in coronary artery pathology.

On the left side, axial image of coronary CT showing the inter-arterial course of the left main. On the right side, FFRCT analysis showing the FFR value in the distal circumflex (0.79), the distal left anterior descending artery (0.82), and the right coronary artery (0.90).

LCX: 0.79
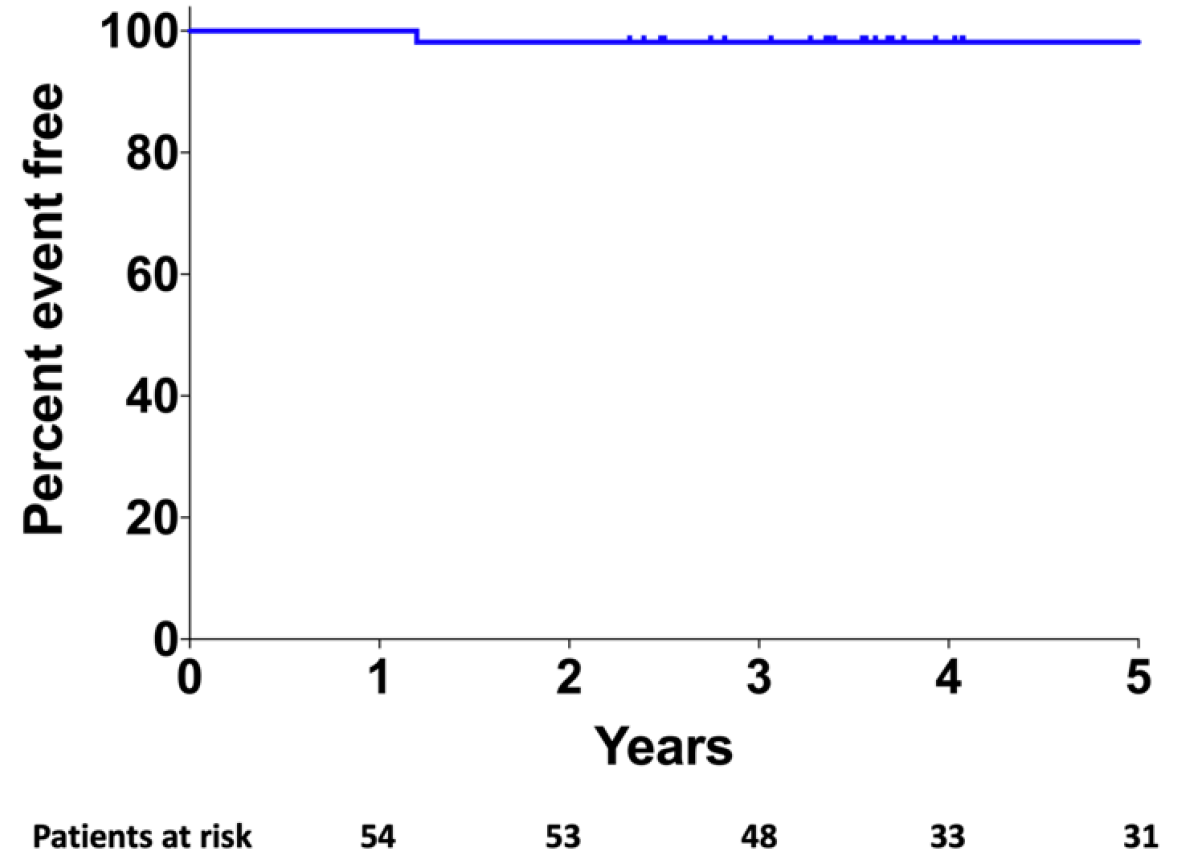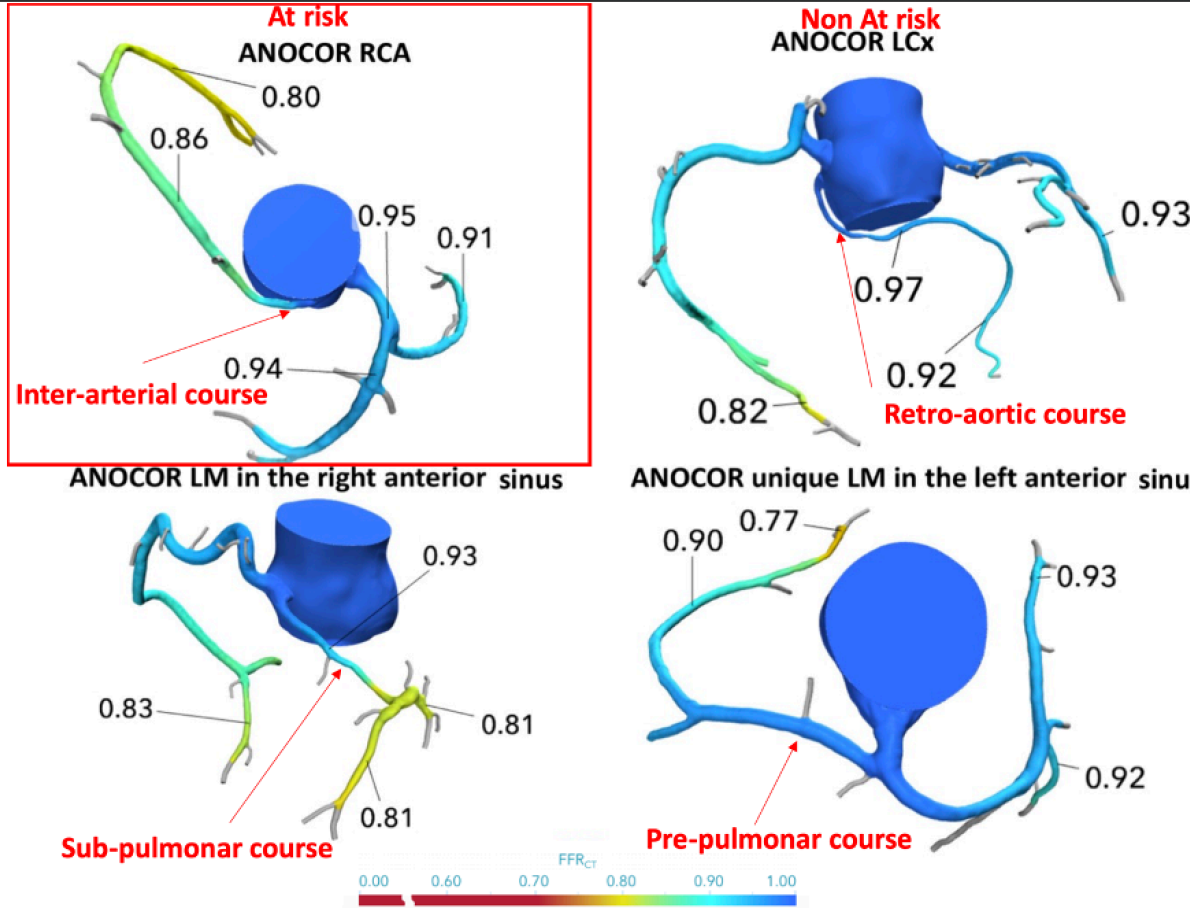RCA
LM
RCA: 0.90
LAD: 0.82
FFR_CT
0.00 0.60 0.70 0.80 0.90 1.00

FIGURE 1 Coronary CTA and FFR-CT Images of Right Coronary Arteries With Anomalous Aortic Origin in Presence and Absence of Intramural Path
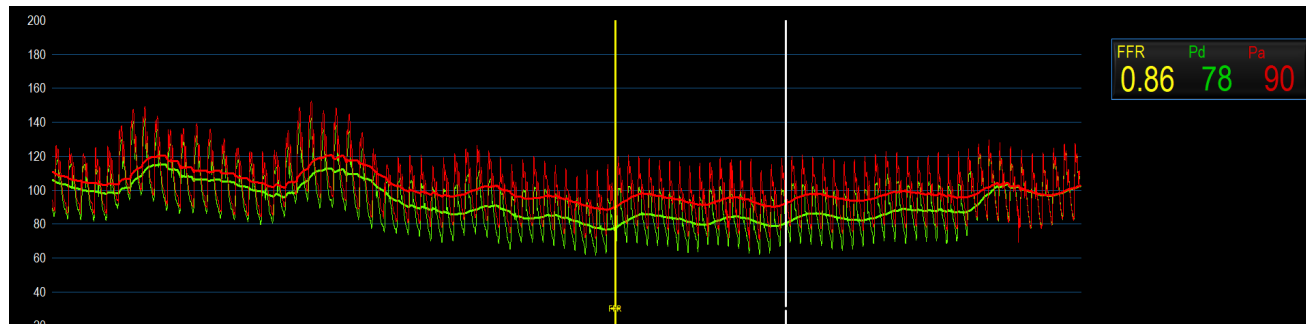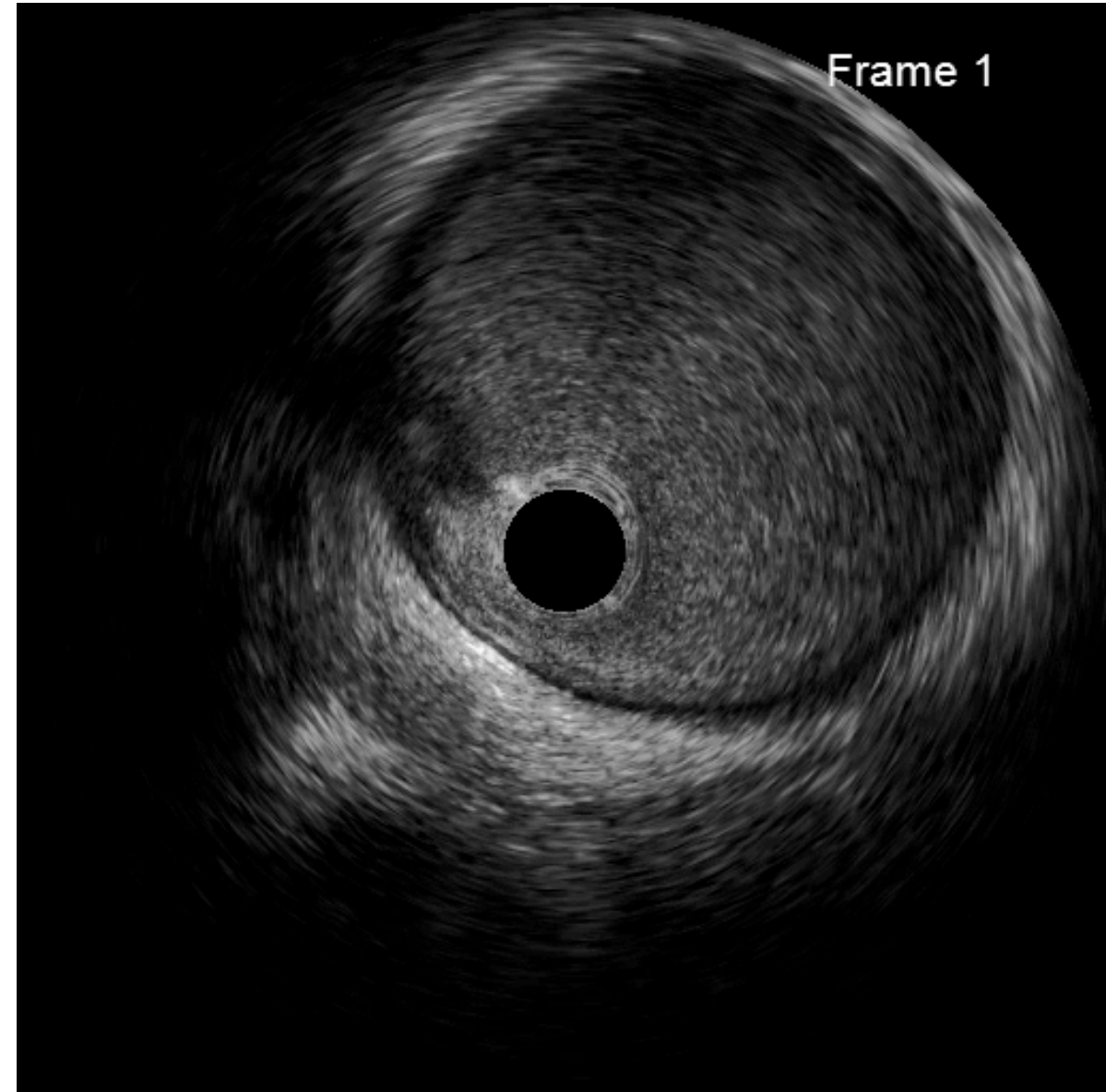
A

B

C
0.75
0.89
0.53
0.78

D

E

F
0.98
0.87
0.96
0.80

FFR_CT
0.00 0.60 0.70 0.80 0.90 1.00
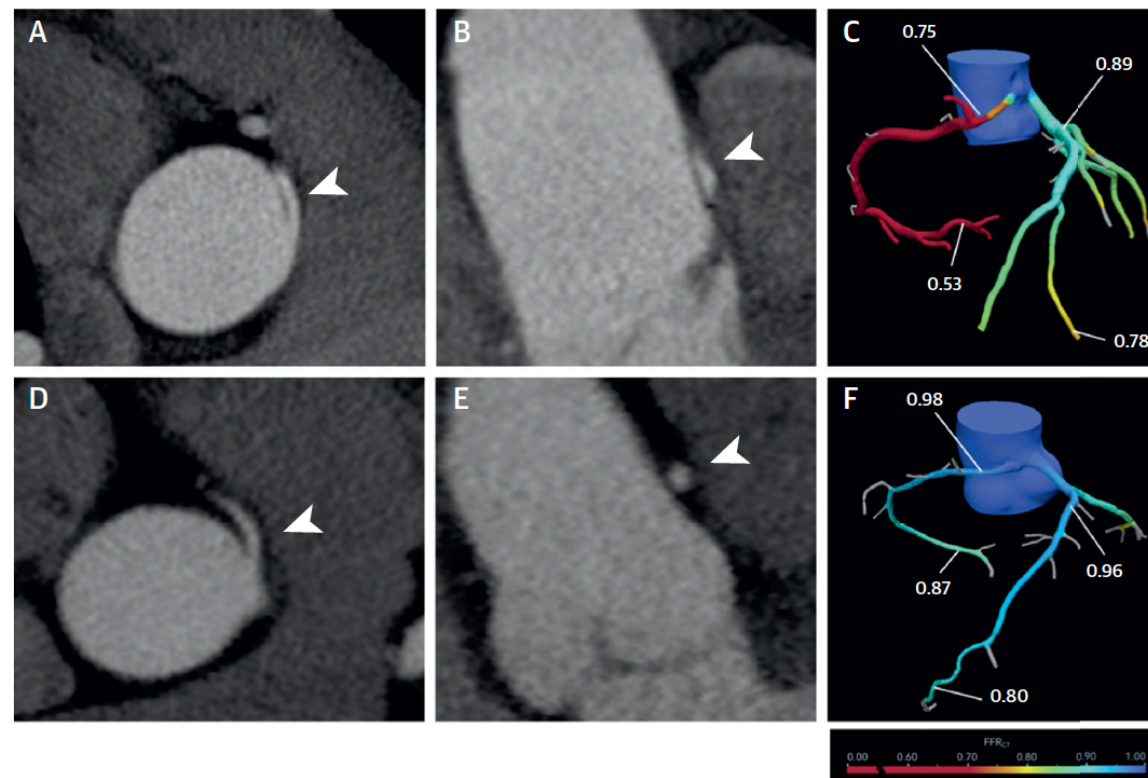
Right coronary arteries with interarterial course and presence **(A to C)** or absence **(D to F)** of intramural path on coronary computed tomography angiography (CTA). Note typical aspects of intramural path on coronary CTA with a takeoff angle <30° **(A, white arrowhead)** and elliptic coronary luminal narrowing >50% **(B, white arrowhead)** of anomalous aortic origin of coronary artery with fractional flow reserve-computed tomography values measured at 0.75 proximally and 0.53 **(C)**. In the absence of an intramural path, the takeoff angle was >30° **(D, white arrowhead)** and luminal narrowing <50% **(E, white arrowhead)** on coronary CTA, and fractional flow reserve-computed tomography values were measured at 0.98 proximally and at 0.87 distally **(F)**.
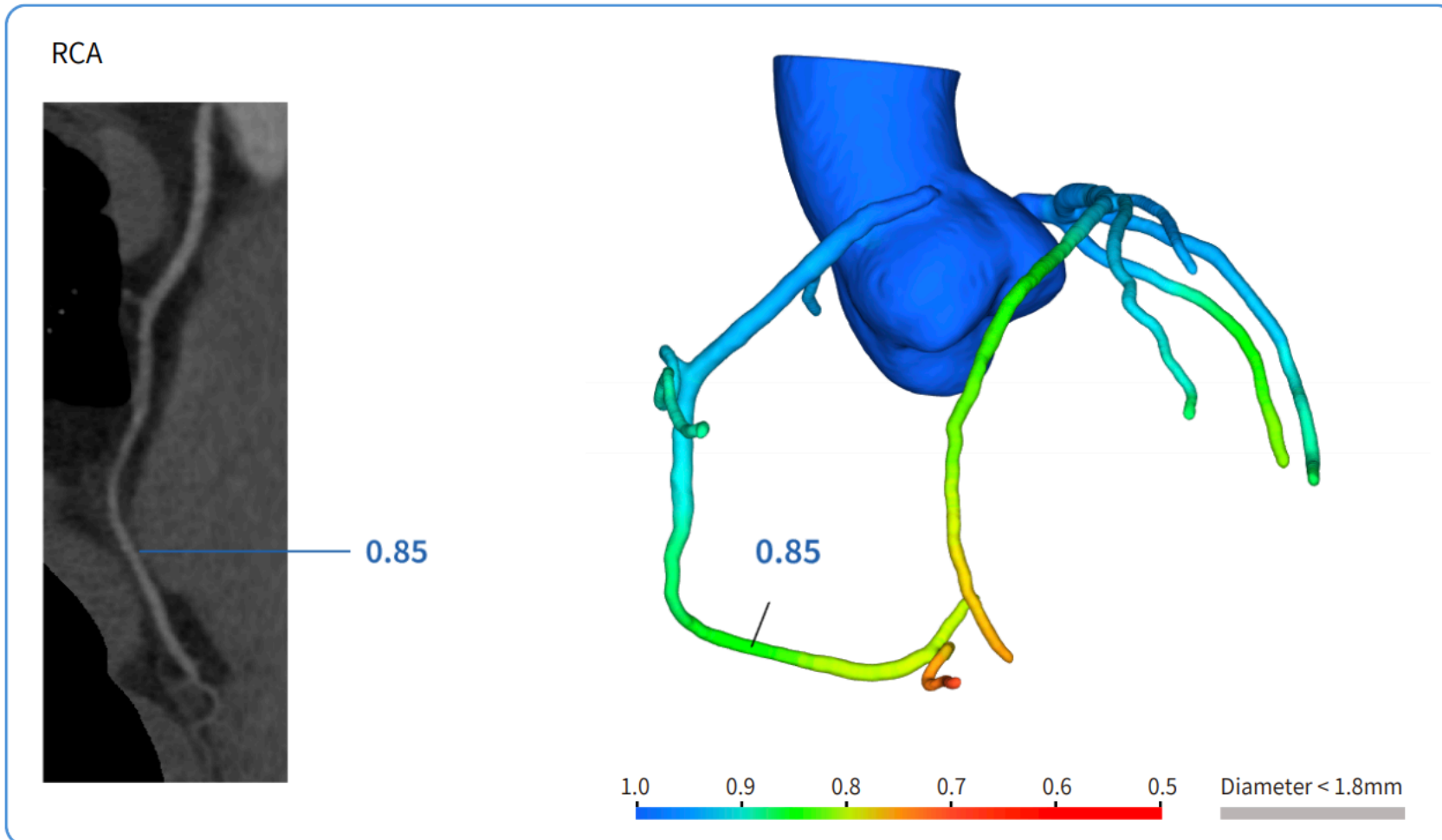
ARNAULT TZANCK
SAINT-LAURENT DU VAR

Etat de la littérature

At risk
ANOCOR RCA
0.80
0.86
0.95
0.91
0.94
Inter-arterial course
ANOCOR LM in the right anterior sinus

Non At risk
ANOCOR LCx
0.97
0.93
0.92
0.82
Retro-aortic course
ANOCOR unique LM in the left anterior sinu
0.90 0.77
0.93
0.92

0.83
0.81
0.81
Sub-pulmonar course
FFR$_{CT}$
0.00 0.60 0.70 0.80 0.90 1.00

Pre-pulmonar course

Patients at risk   54   53   48   33   31

Adjedj et al. JAHA 2021

Coronarographie

Frame 1

FFR Pd Pa
0.86 78 90

DVFFR

Merci pour votre attention