Strasbourg, France

Percutaneous coronary interventions in **ano**malous connections of the **cor**onary arteries

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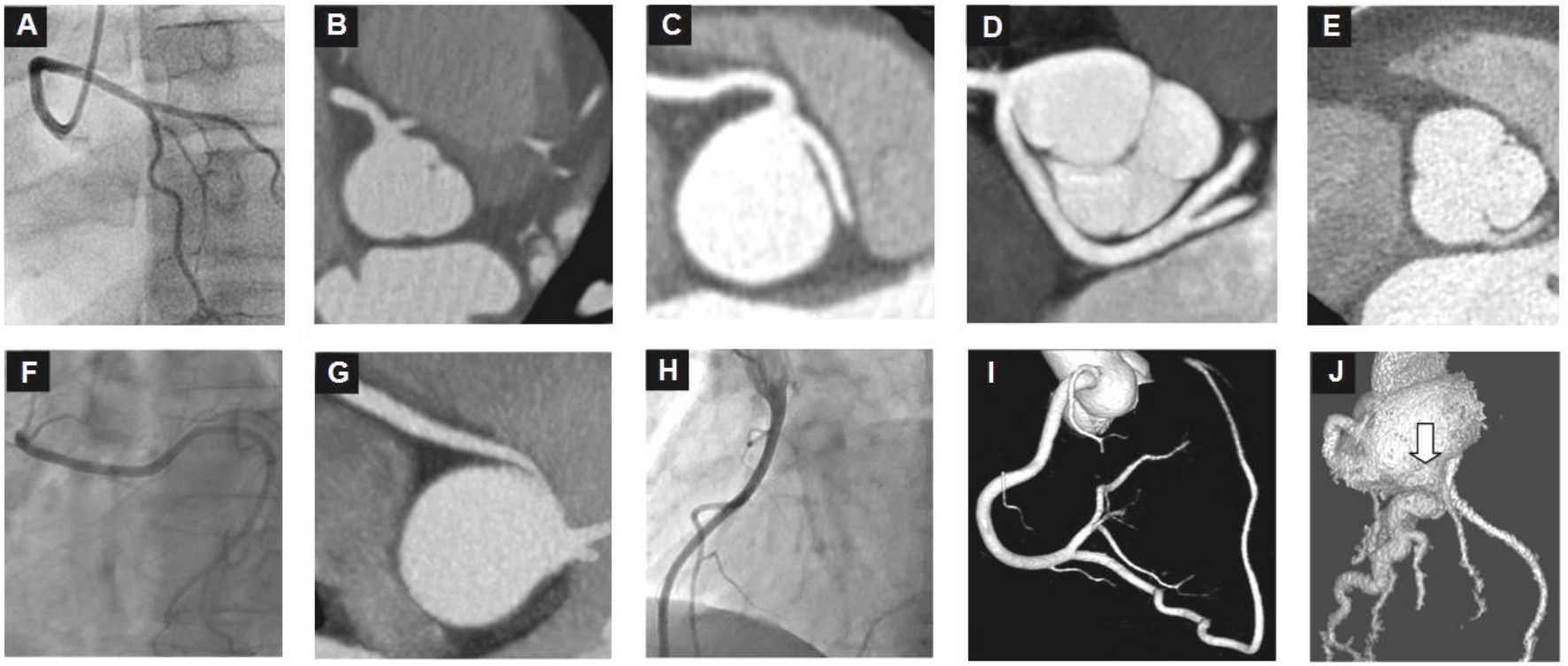
Conflict of interest: nothing to report

PCI in anomalous connections of the coronary arteries (ANOCOR)

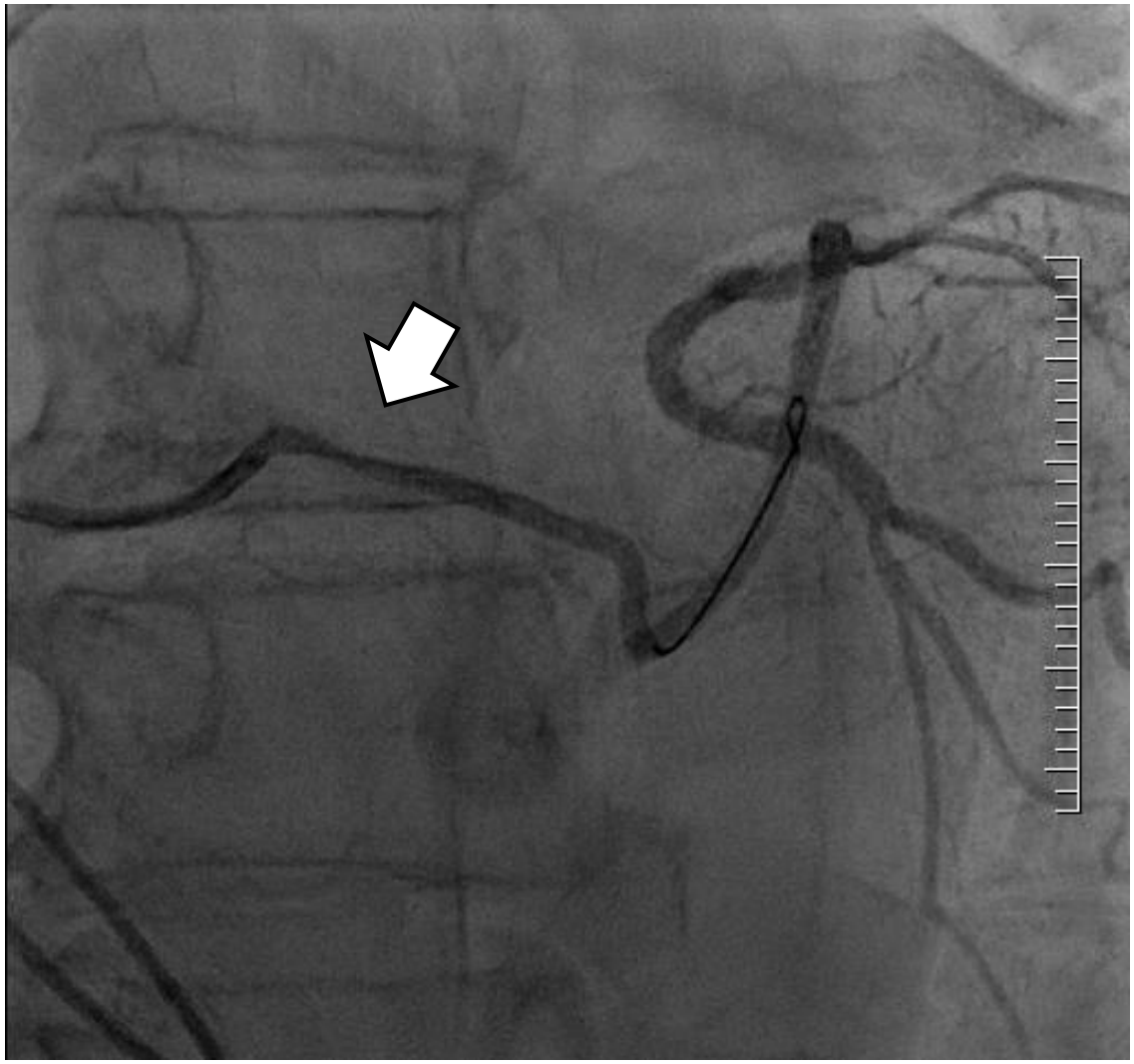
- PCI in anomalous connections with CAD
- PCI in anomalous connections without CAD

PCI in anomalous connections of the coronary arteries (ANOCOR)

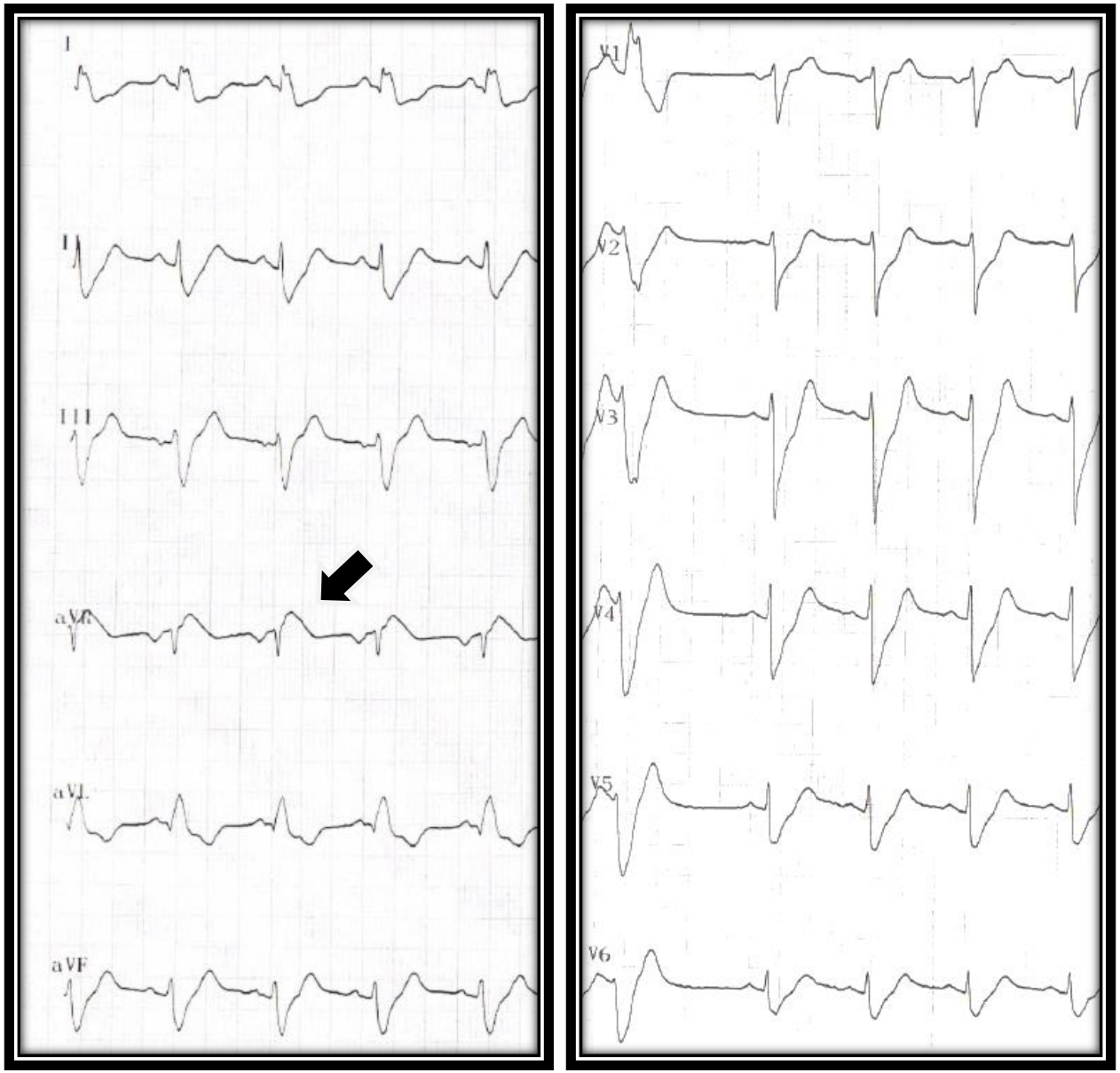
wide spectrum of abnormalities

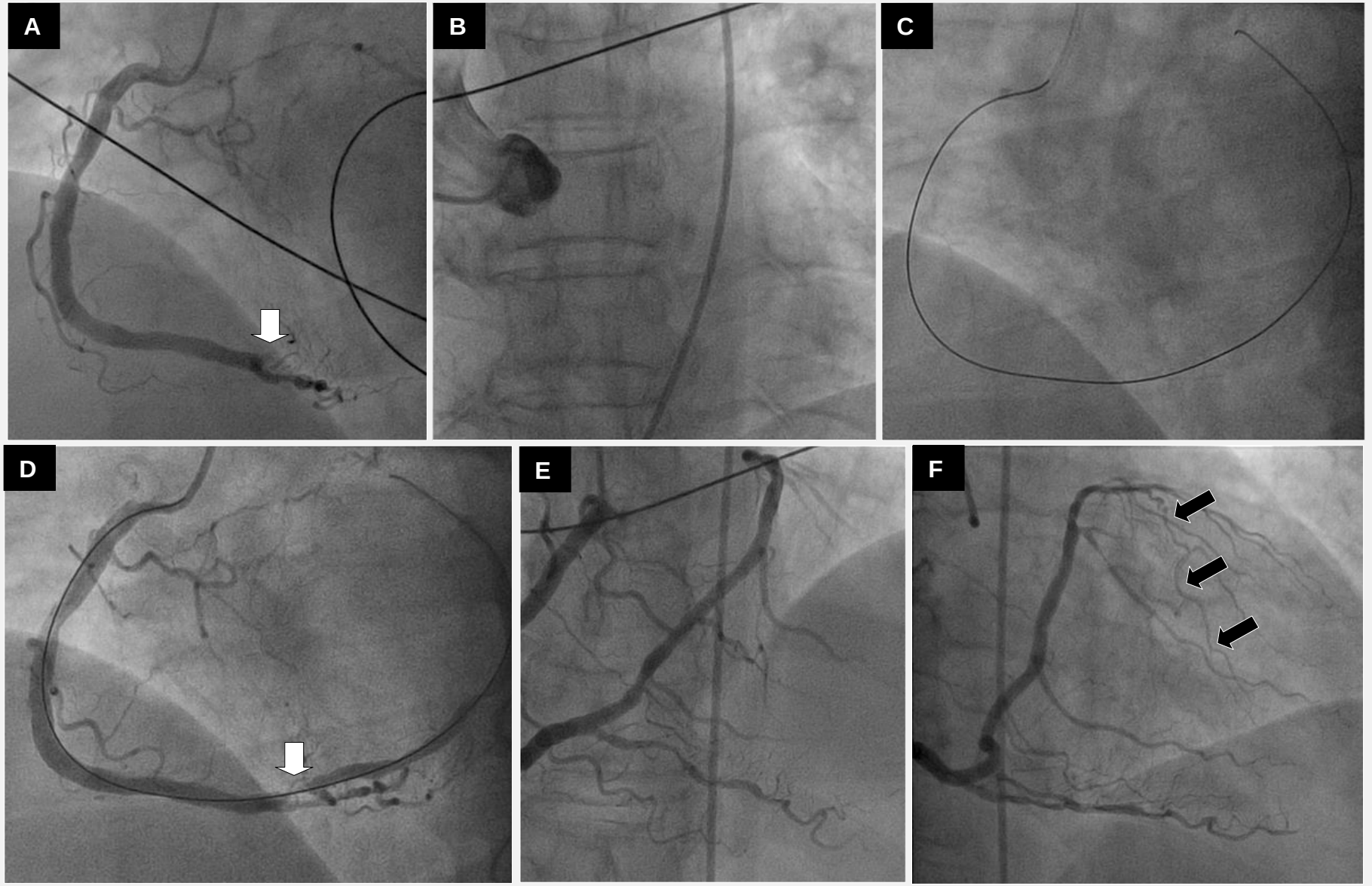


PCI in anomalous connections of the coronary arteries (ANOCOR)

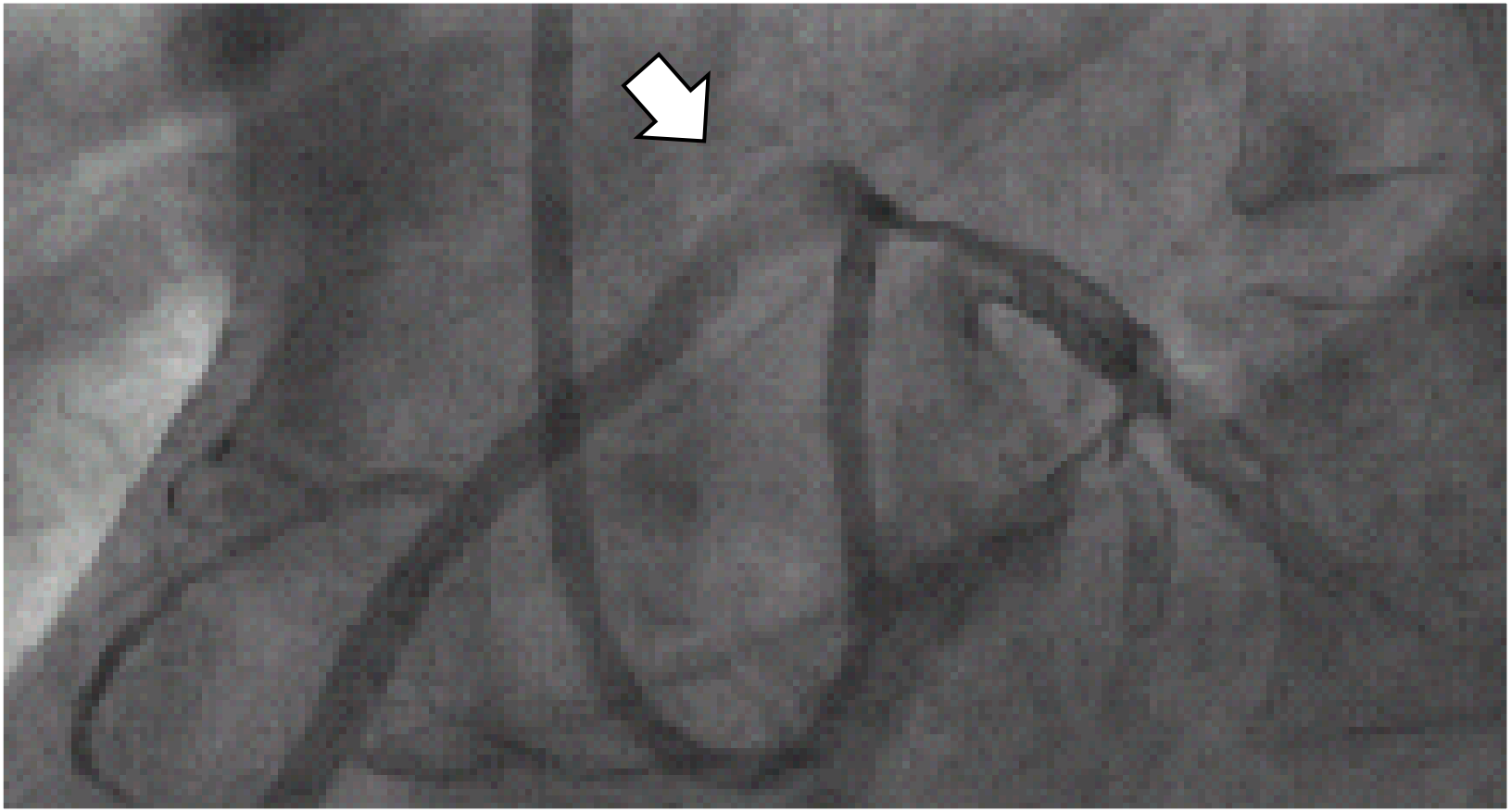


LM anomalous connection with CAD

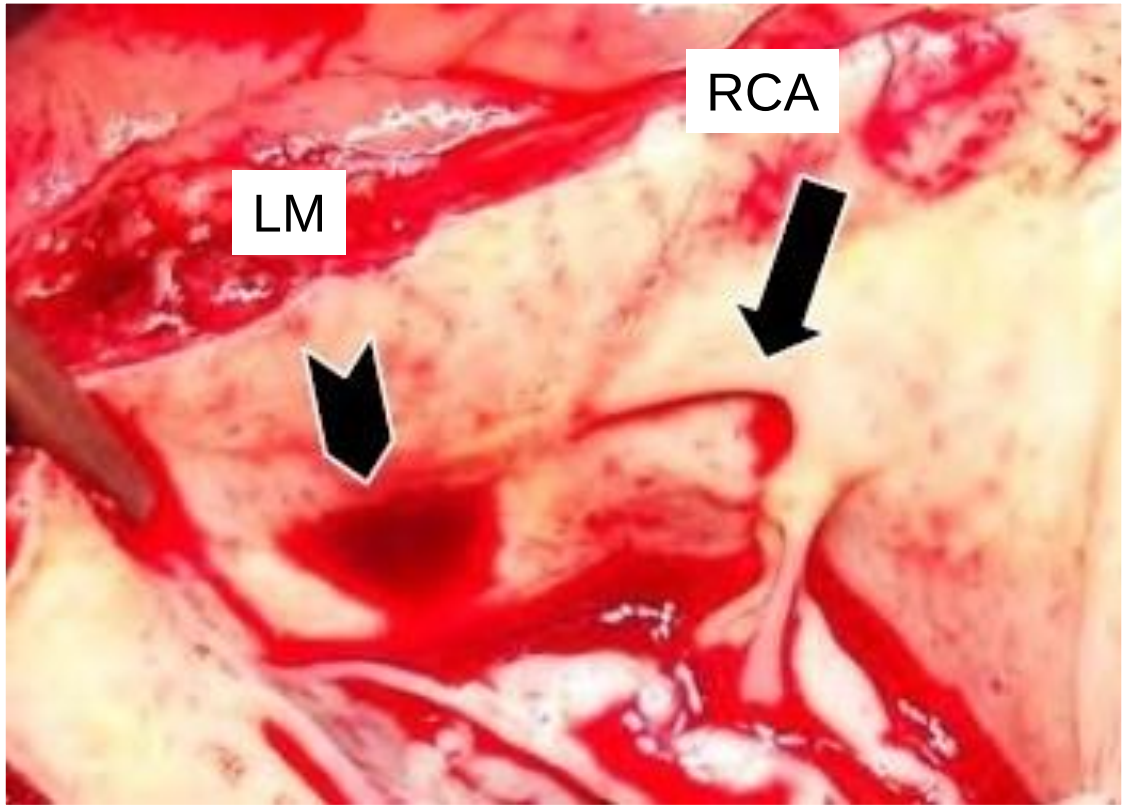

I
II
III
aVR
aVL
aVF
V1
V2
V3
V4
V5
V6


A
B
C
D
E
F

anomalous connection of the right coronary artery

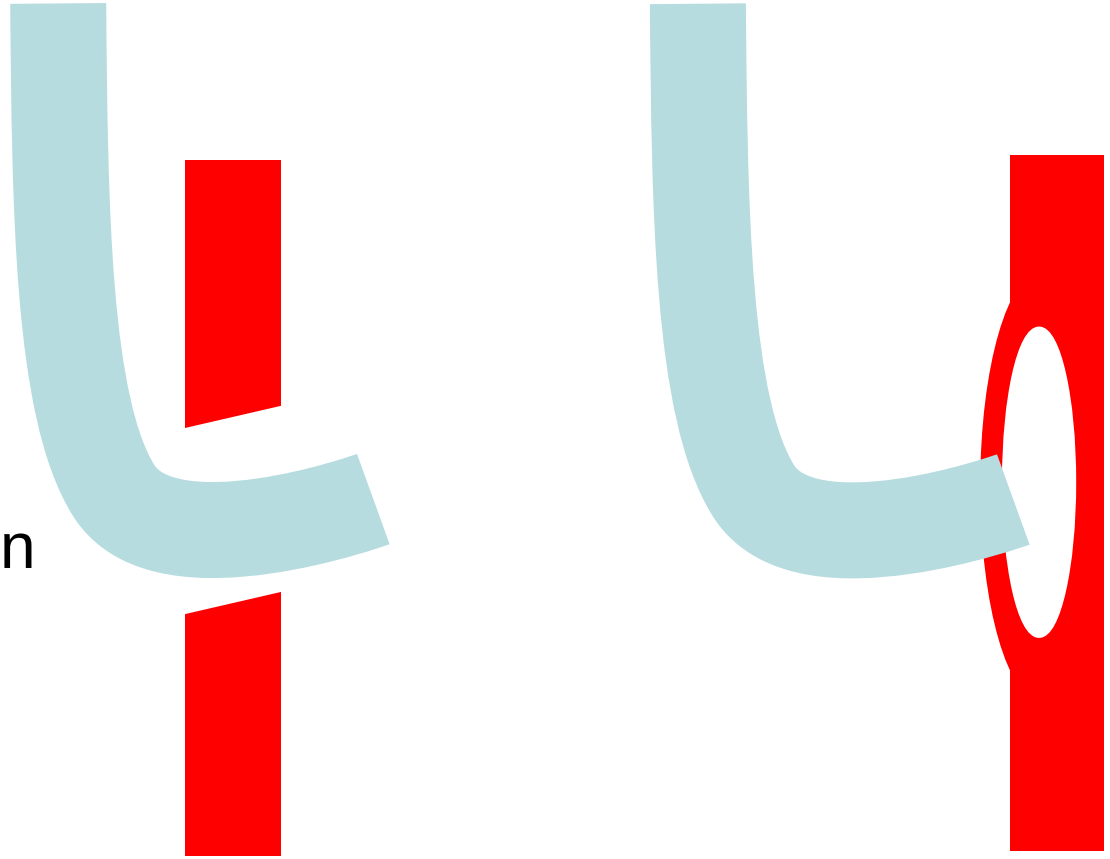


anomalous connection of the RCA



Hata Y Cardiovasc Pathol 2014

cannulation of ectopic connection with intramural pathway



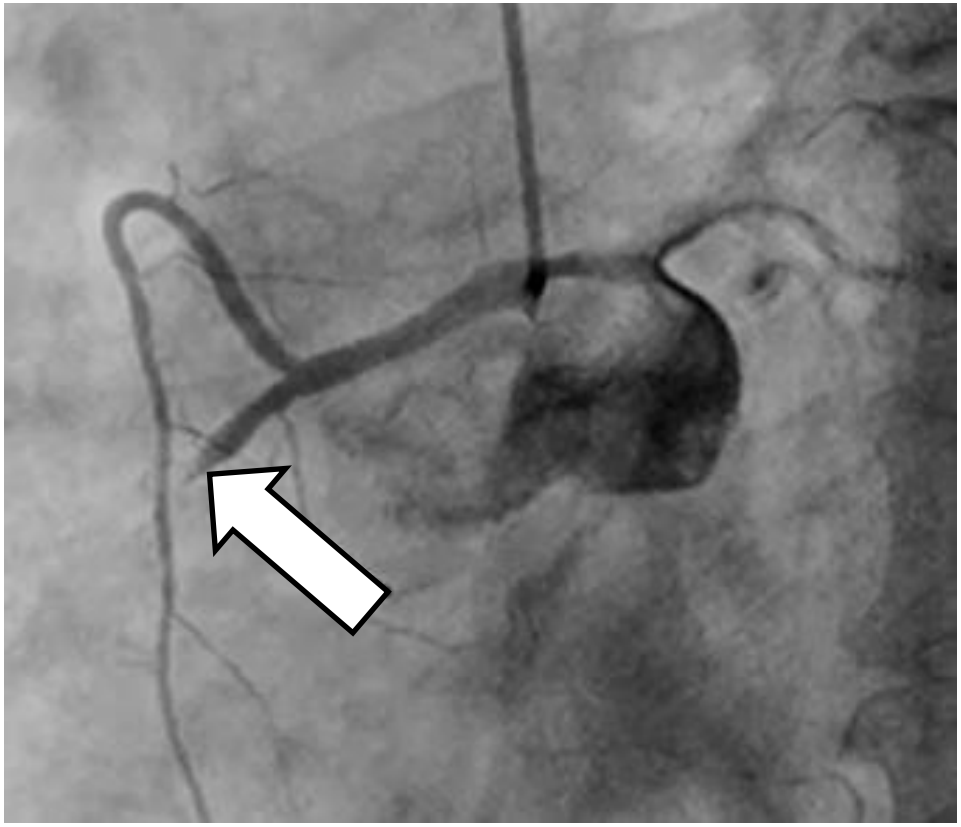
normal connection

ectopic connection

cannulation with coaxial position

cannulation with coaxial position

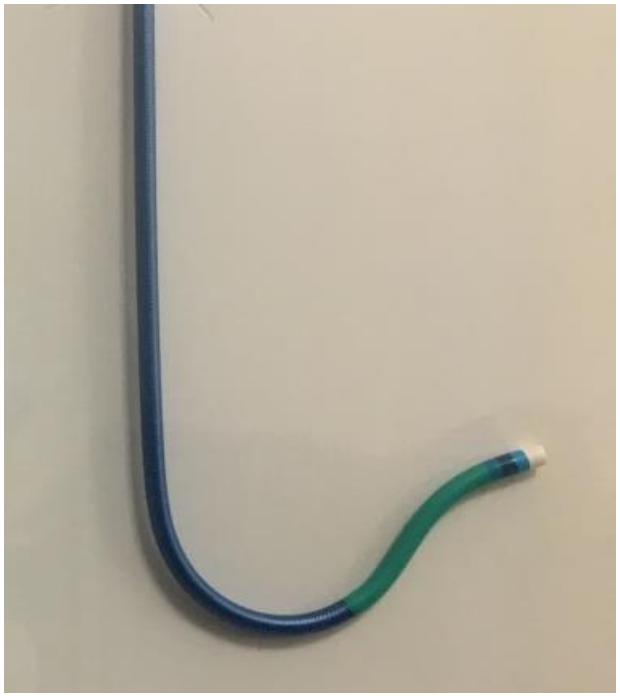
anomalous connection of the RCA



two challenges:
good opacification of the ectopic vessel
good back-up support

catheters for right coronary artery

Adroit® Cordis



Launcher® Medtronic

PCI in anomalous connections of the coronary arteries (ANOCOR)

CASE REPORT
Korean Circ J 2008;38:179-183

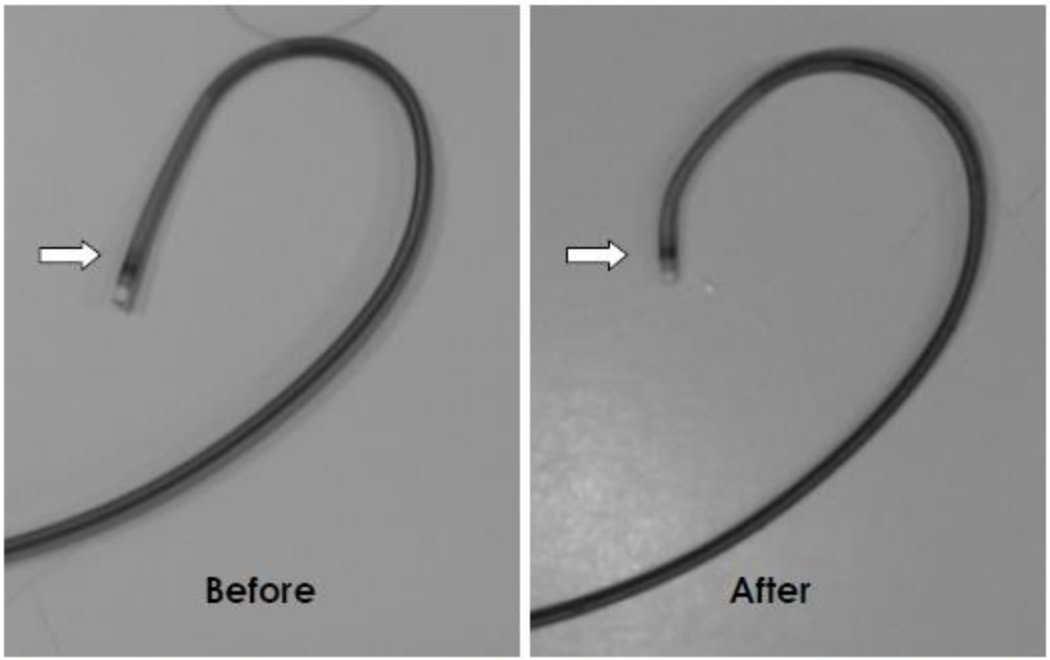


Fig. 3. 5 French launcher EBU4 guiding catheter. Before: the natural shape of the EBU4 guiding catheter. After: the manually manipulated EBU4 guiding catheter (arrow) using a hair dryer. EBU: extra-backup.

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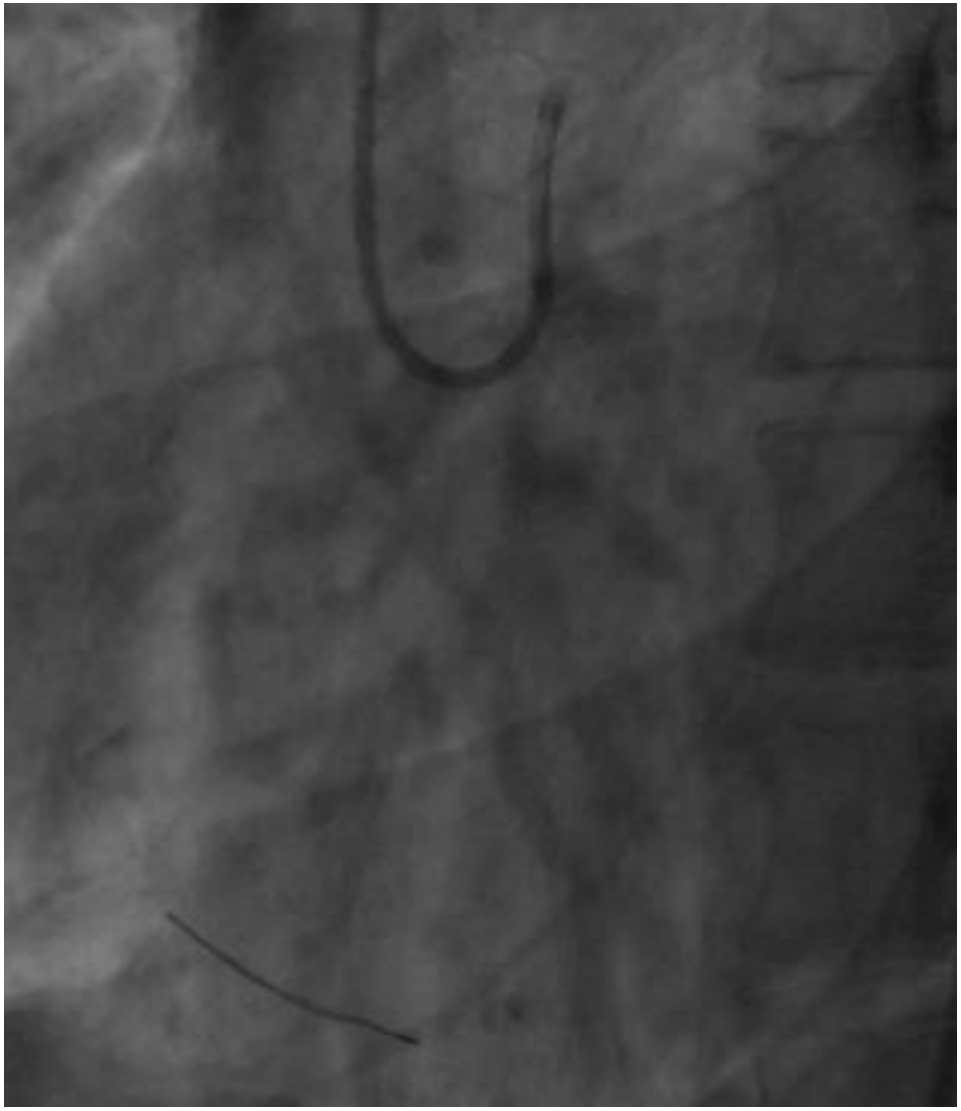
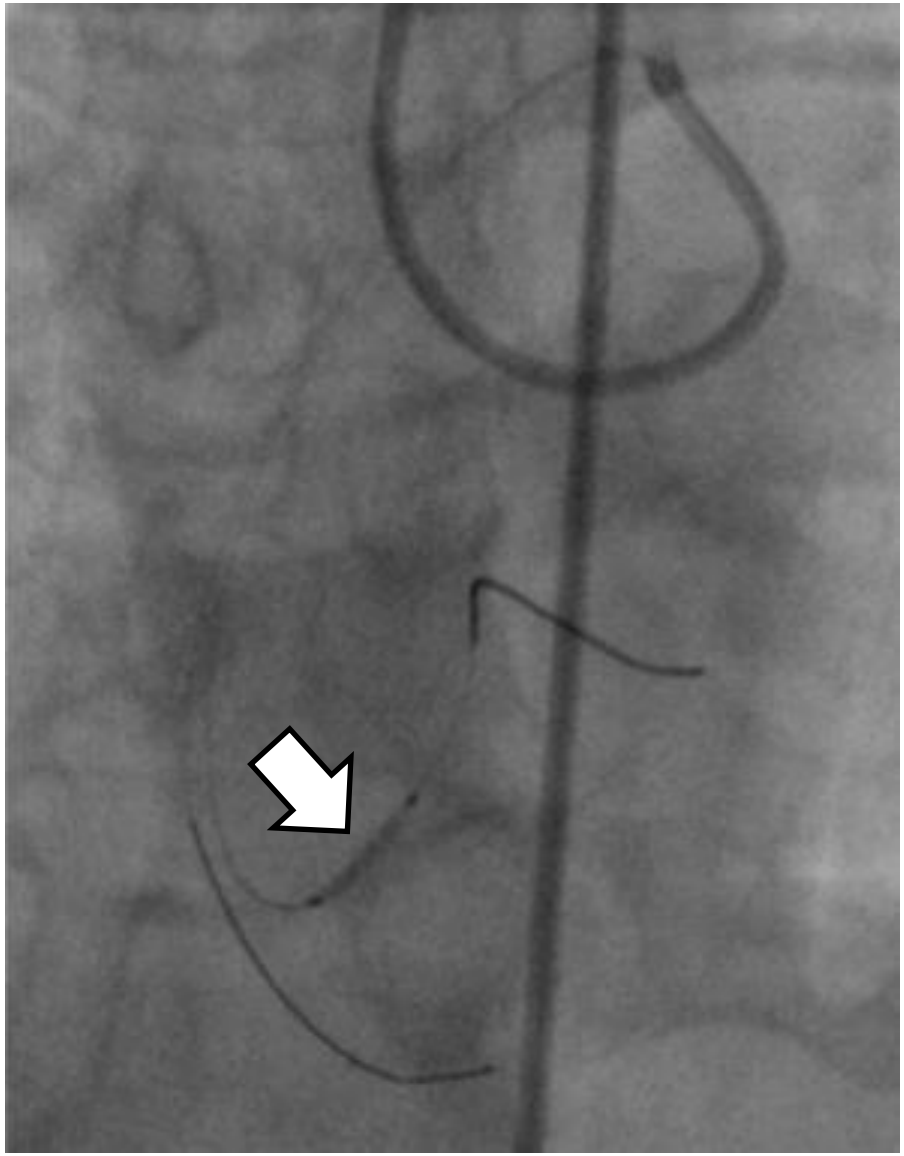
guide wire 0.014 to improve stability



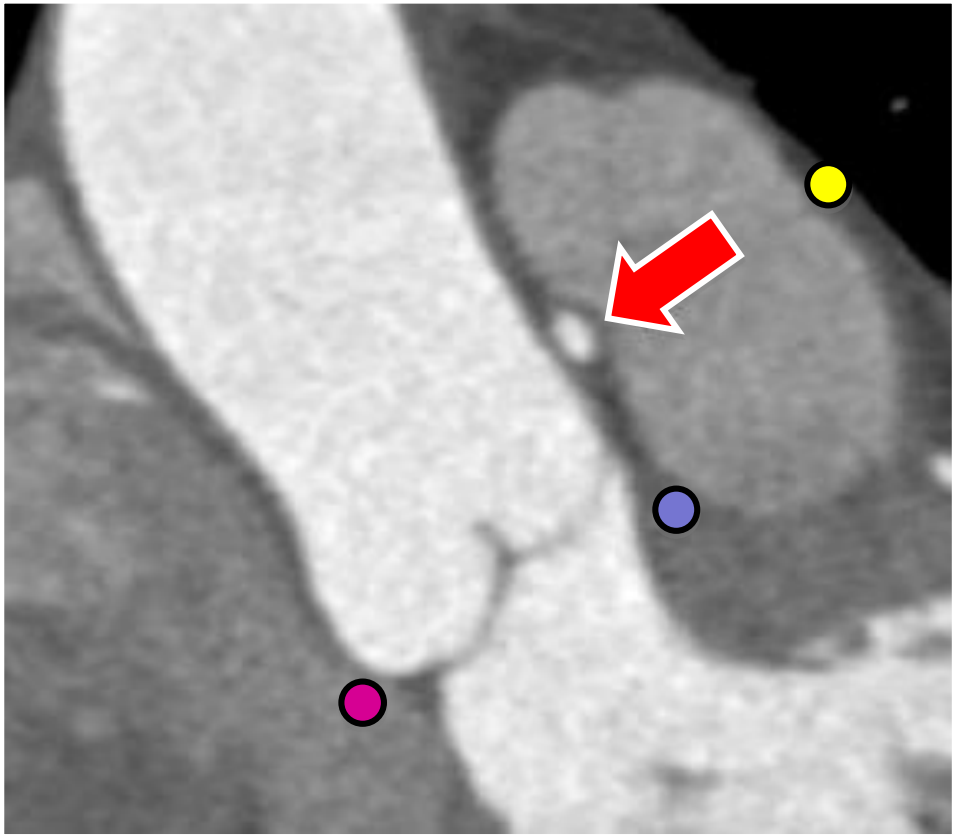
guide wire 0.014 to improve stability



PCI in anomalous connections without CAD

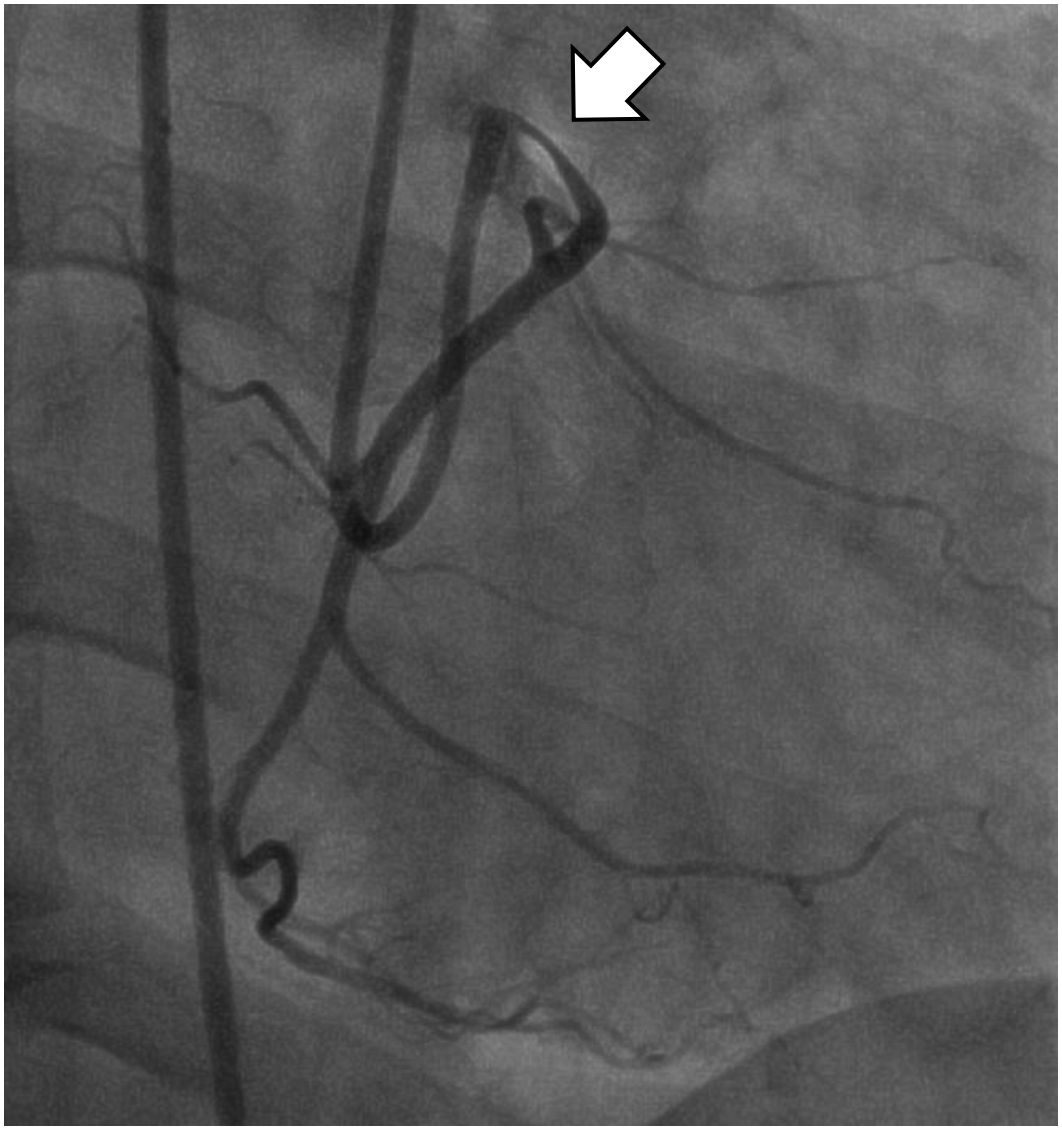
- accurate diagnosis of the anomalous connection
- identification of abnormalities requiring correction
- place of PCI?

course and risks (ischemia/sudden death)



- pre pulmonar
- retro pulmonar
- pre aortic
- retro aortic

PCI in anomalous connections of the coronary arteries (ANOCOR)



right anomalous connection without CAD

PCI in anomalous connections without CAD

rationale for PCI

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

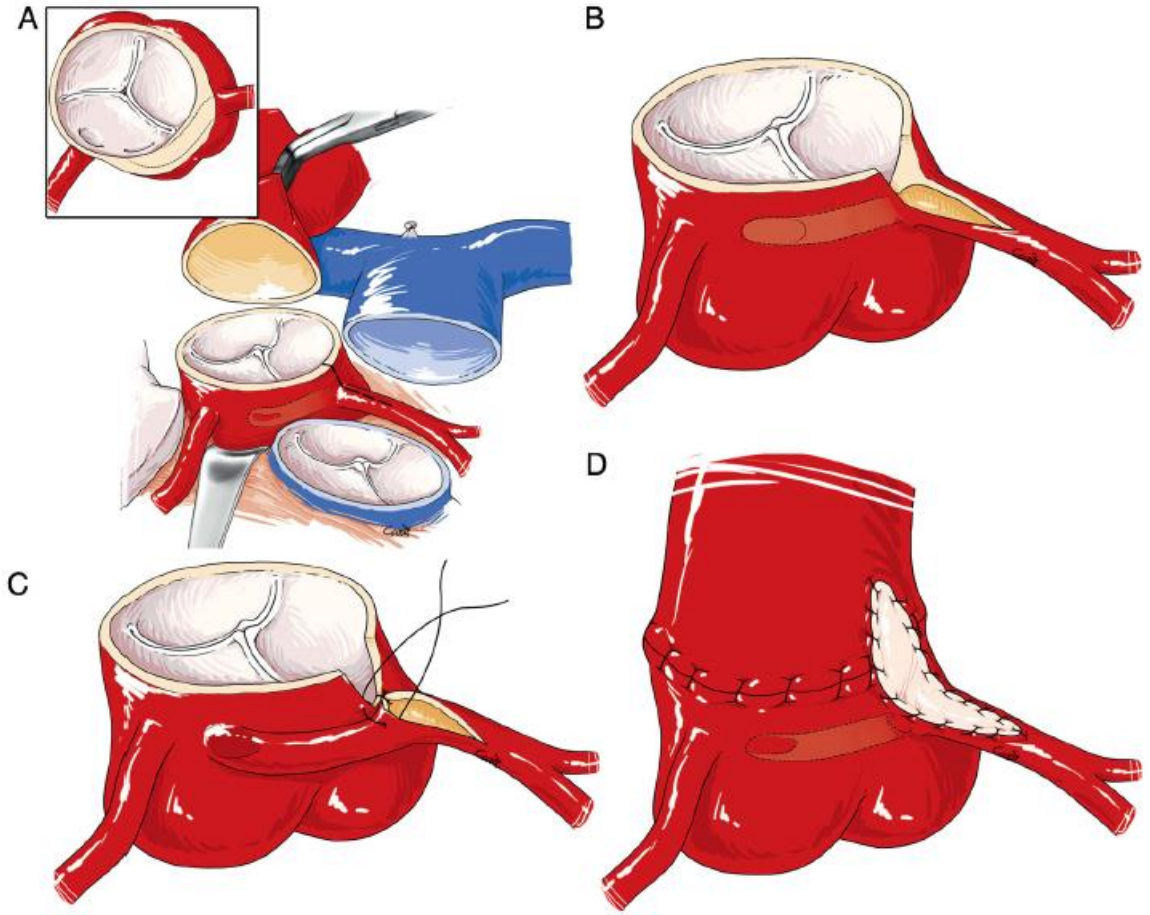
8.5. Recommendations for Congenital Coronary Anomalies of Ectopic Arterial Origin

CLASS I

Circulation December 2, 2008

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*)

Surgical repair: creation of neo ostium



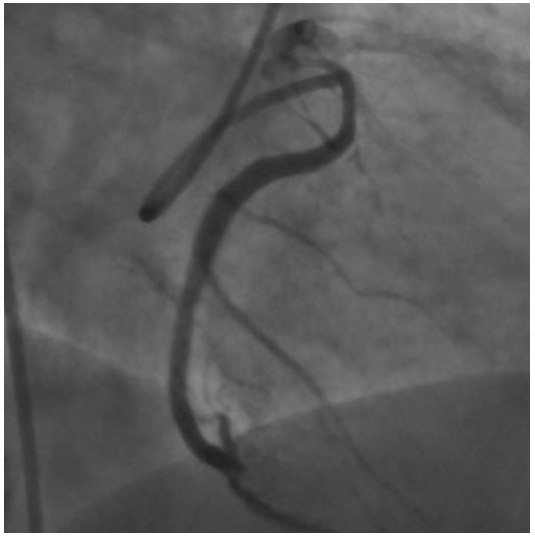
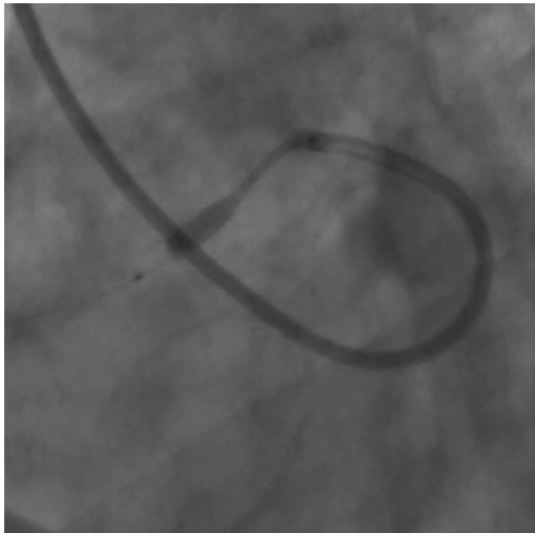
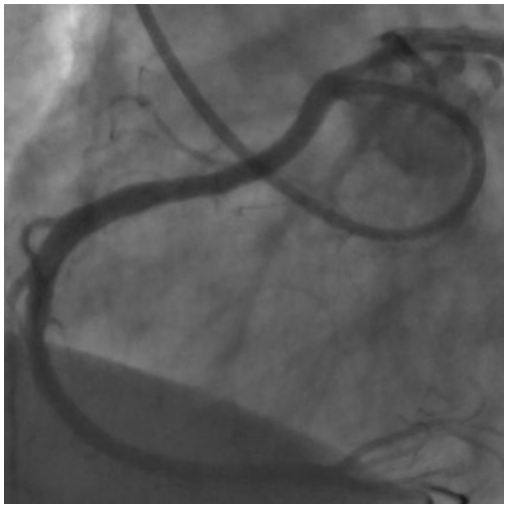
Gaudin R et al. Multimed Man Cardiothorac Surg 2014

weaknesses of surgical repair

- Guidelines focused on young people
- No randomized controlled studies
- Lack of long-term data after correction
- Possible failure (stenosis/aneurysm/thrombosis)

PCI in anomalous connections of the coronary arteries (ANOCOR)

stenting of a non atherosclerotic lesion


Origin of the Right Coronary Artery from the Opposite Sinus of Valsalva in Adults: Characterization by Intravascular Ultrasonography at Baseline and After Stent Angioplasty

Paolo Angelini,[1,2*] MD, Carlo Uribe,[2] MD, Jorge Monge,[2] MD, Jonathan M. Tobis,[3] MD, MacArthur A. Elayda,[4] MD, PhD, and James T. Willerson,[1] MD

- retrospective study with 42 ectopic RCA
- mean age 48±12 years (12-73)
- PCI with IVUS guidance (BMS/Cypher/Taxus/Promus stents)
- indications for angioplasty:

  symptoms/ischemia

  or intensive sport practice

  or IVUS surface reduction >50%
- angiographic success (100%)
- no in-hospital MACE
- angiographic restenosis (4/42)

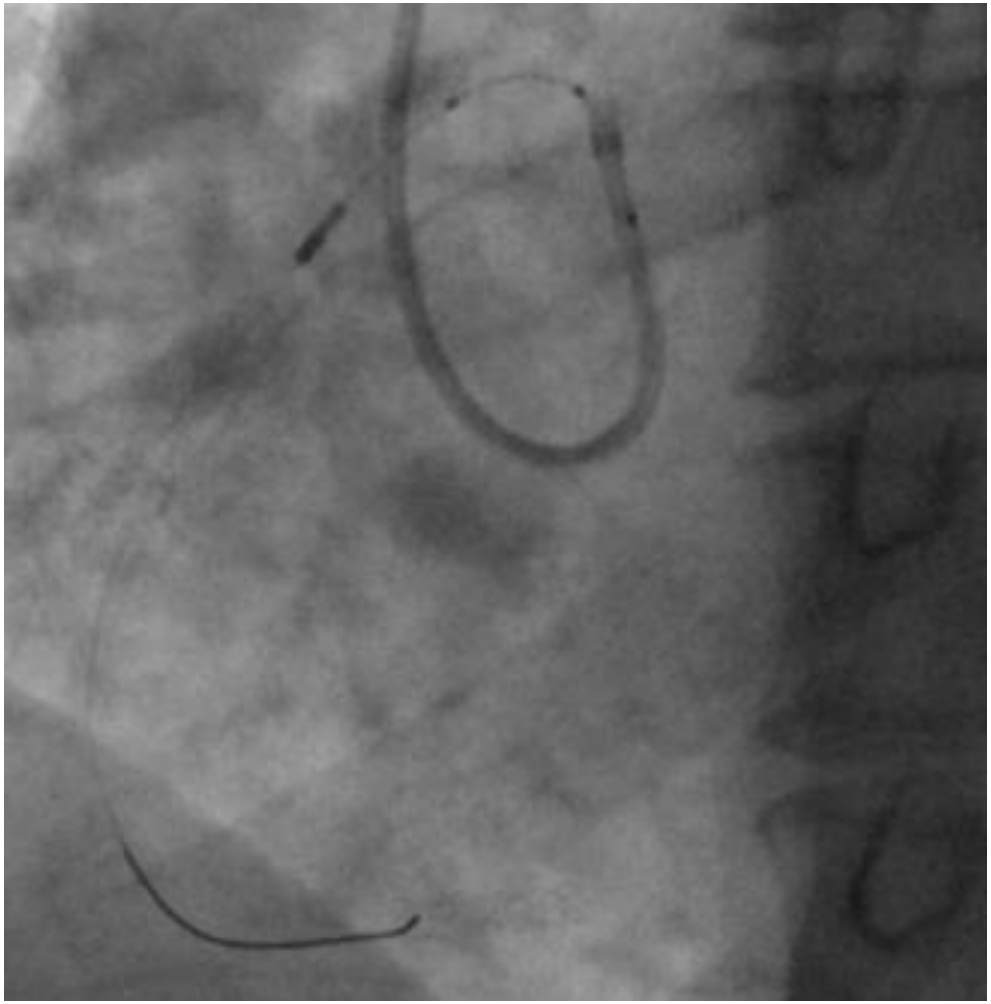
Catheterization and Cardiovascular Interventions 86:199–208 (2015)

ANOCOR stenting registry (2015)
multidisciplinary team

selected population

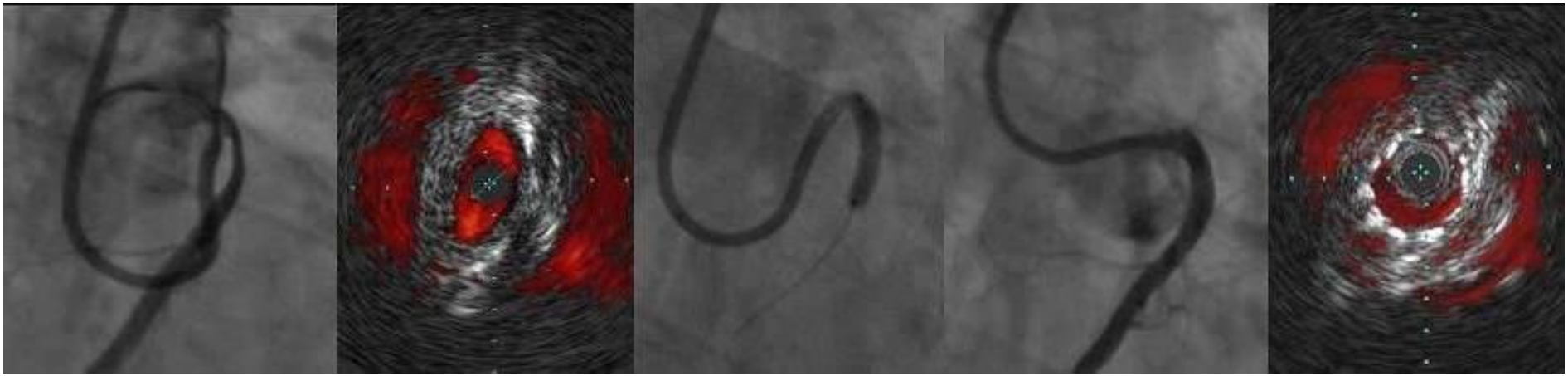
- right anomalous connection
- age >35 year-old
- no history of aborten sudden death
- angina and/or documented ischemia
- pre aortic course with/without intramural pathway
- no significant CAD associated

endovascular ultrasound catheter



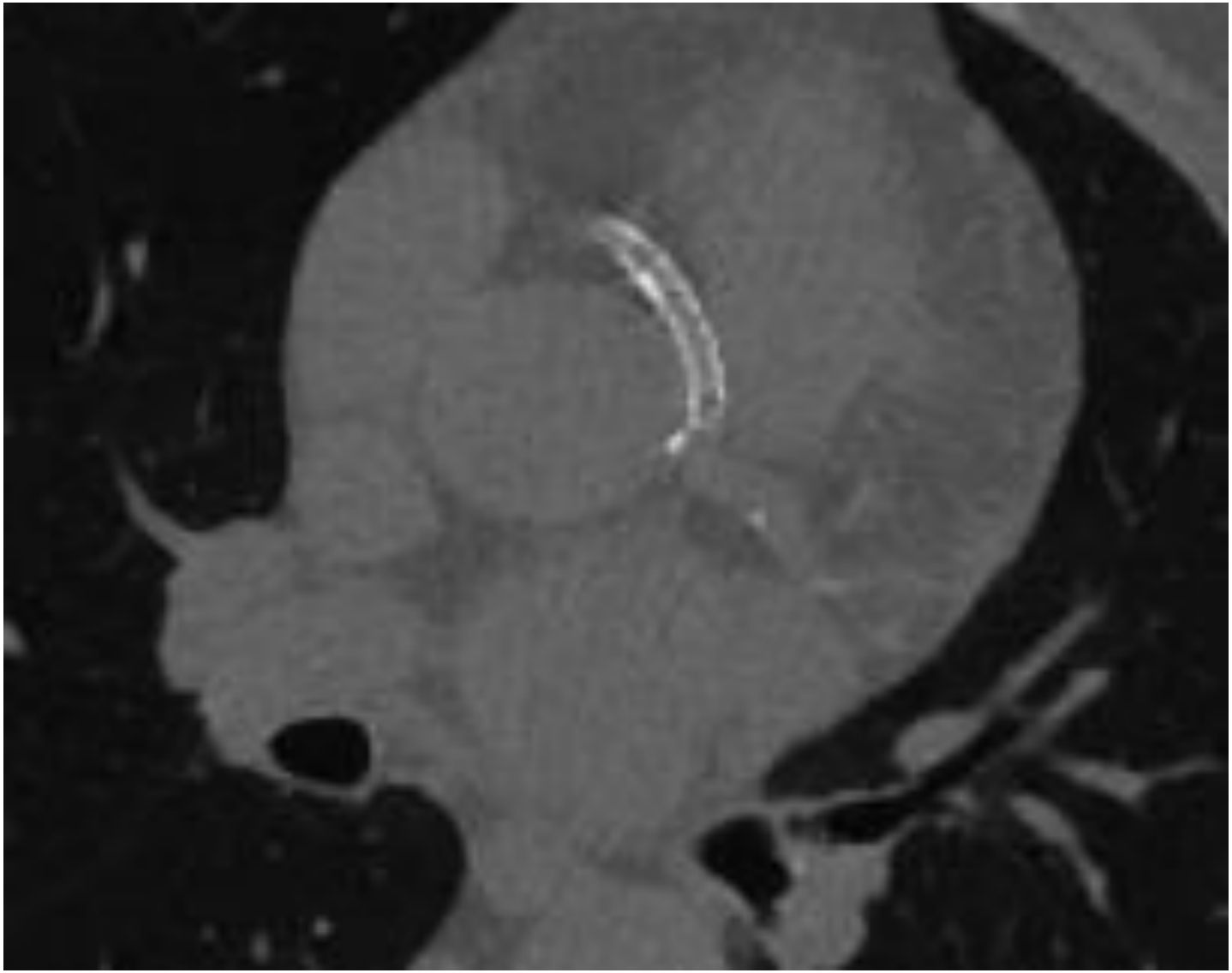
PCI in anomalous connections of the coronary arteries (ANOCOR)

anomalous connection of the right coronary artery



PCI in anomalous connections of the coronary arteries (ANOCOR)

stenting of right ANOCOR (day-90)



conclusions

- PCI in anomalous connections with CAD
  - often challenging procedures
  - use of tips and tricks

- PCI in anomalous connections without CAD
  - feasibility of stenting demonstrated
  - need of controlled long-term follow-up
  - alternative to surgery in a next algorithm?

Thank you