



**Patient with ACS and anomalous LAD:  
How should we treat?**

- Identification.
  - 57 years-old female patient
  - White ethnicity
  - Housekeeper
  - Married
- Previous Comorbidities:
  - Systemic arterial hypertension
  - Smoker (42 pack-years)
  - Denies any previous coronary events

## Admission in emergency room

3 days before: **Subit low intensity chest pain during rest**, accompanied of nausea, and with **hypertension** in physical examination  
(BP: 220X110 mmHg)

Basic Care Unit: received oral treatment for hypertension peak and was released

At admission: **Chest pain** 3 hours ago, **high intensity**, with epigastric irradiation, nausea and with hypertension (230x120mmHg)

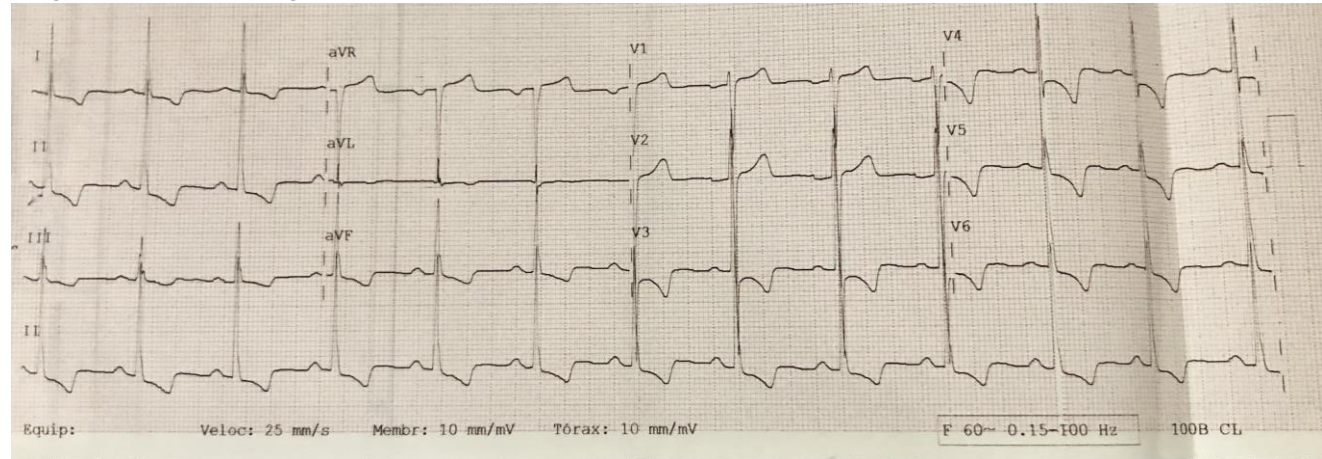
## Initial Approach

BP: 200x100 mmHg  
HR: 100 bpm

Without jugular  
turgence

Normal pulmonar and  
cardiovascular  
auscultation

Figure 1: Electrocardiogram



Troponin-us: 9,44 ng/L (0-14ng/L)

NSTE-ACS = non-ST-segment elevation ACS

### Coronary Angiography

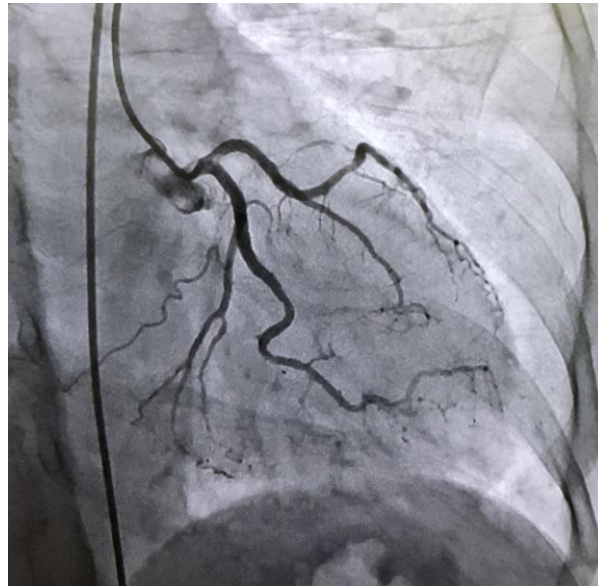


Fig. 2: Right oblique incidence showing only left circumflex

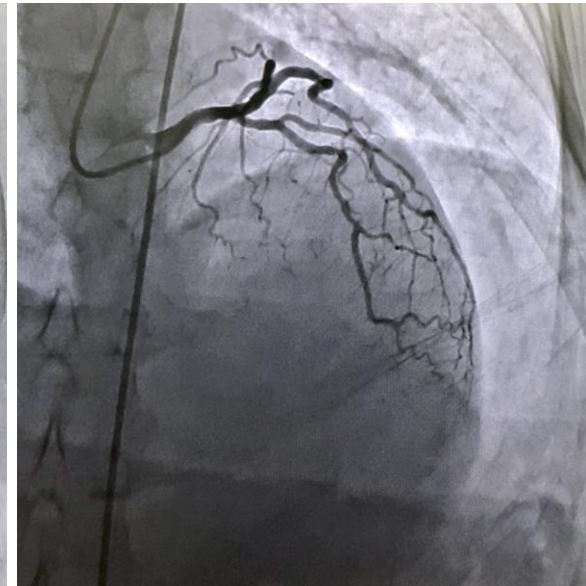


Fig. 3: Right oblique cranial incidence showing only left circumflex

### Initial Approach

#### Clinical Treatment Performed:

- Dual anti-platelet therapy
- Anticoagulation
- Blood pressure control

### Echocardiogram:

- LVEF: 66% (Simpson without segmentar abnormalities)
- Left ventricle diastolic dysfunction grade II
- Left ventricle concentric hypertrophy

## Coronary Angiography

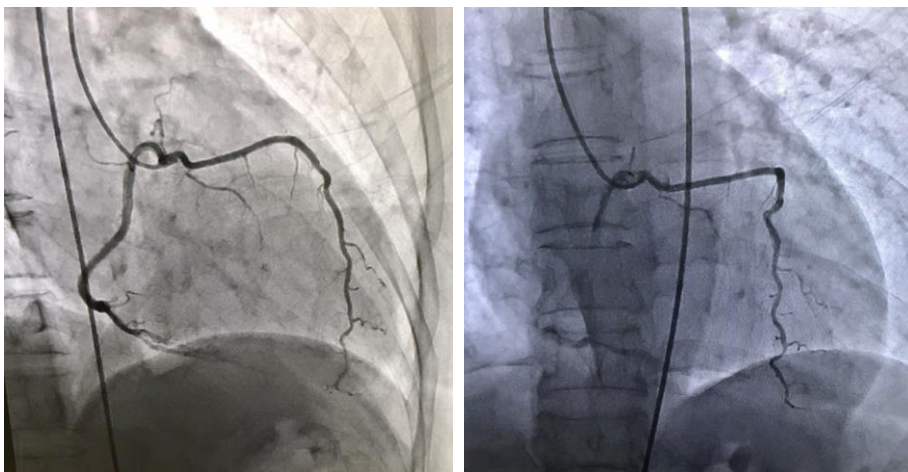


Fig. 3/4: Right oblique incidence with right coronary and interarterial anomalous left anterior descending artery

Patient was submitted to Stress Echocardiogram without ischemia (12 METS).

**Heart team decision:** Keep follow-up with cardiology and clinical treatment and strict BP control.

## Coronary Angiotomography

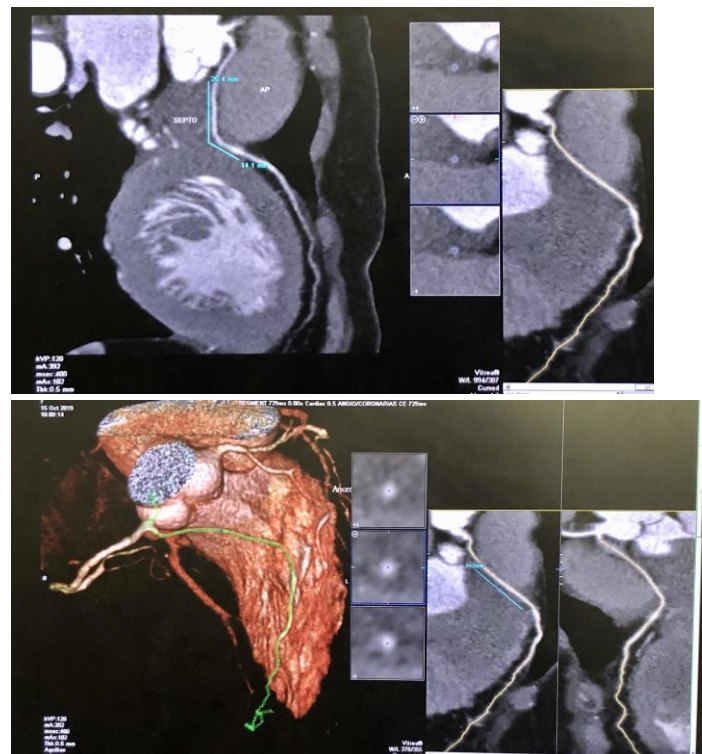


Fig. 5/6: Agatston score: 2.  
Anomalous anterior descendent emerging of right coronary sinus with path between aorta and pulmonar artery, without luminal narrowing



Neves PO, Andrade J, Monção H, et al. 2015

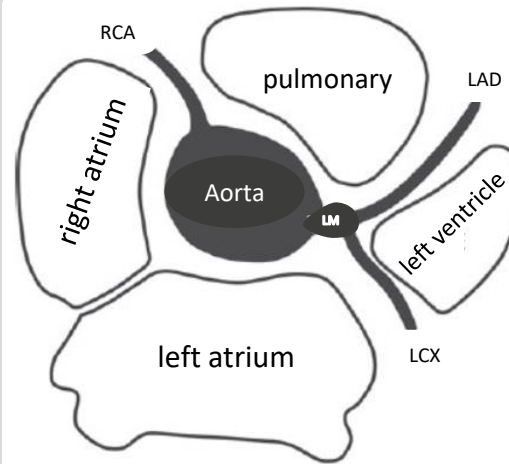
## Anomalies of Coronary Classification:

- 1) origination and course;
- 2) intrinsic coronary arterial anatomy;
- 3) coronary termination.

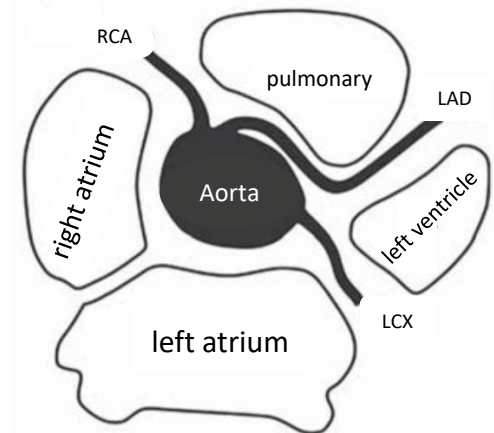
**Main prognostic factor → Origin and proximal course of anomalous artery**

***Interarterial course anomalies had increase risk of sudden death!***

Unknown prevalence → association with Fallot tetralogy, complex transpositions and double right ventricular output tract.



Normal coronary anatomy .  
LM: Left main; LAD: left anterior descending; LCX: = left circumflex;  
RCA: right coronary artery



Anomalous origin of anterior descending emerging from right coronary sinus, with interatrial path

Commonly described as “malignant course” → greater risk for sudden death

Shriki JE, Shinbane JS, Rashid MA, et al, 2012.  
Hejmadi A, Sahn DJ. 2003.

The most frequent type of hemodynamically significant anomaly.

Shriki JE, Shinbane JS, Rashid MA, et al, 2012.

Several causes are suggested to explain this higher incidence of sudden death:

- \* Vessel with this course would be prone to obstruction during exercise (compression by aorta and pulmonar artery)
- \* Associations of other factors like:
  - acute angle take-off
  - ostial stenosis or stil-like ostium
  - intramural aortic segment

Angelini P, 2007.  
Warnes CA, Williams RG, Bashore TM, et al. 2008.  
Shriki JE, Shinbane JS, Rashid MA, et al, 2012.

*This case has relevance not only because of interarterial path of this anomalous artery, but also because of intramiocardic path. This presentation represents a lack in literature and knowledge, without quied and protocolled treatment and approach.*