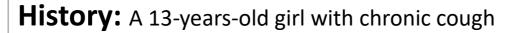




## بِنْ لِللهِ السَّمْ ال

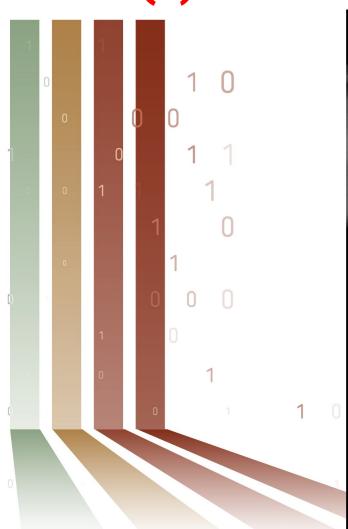
فَفَهَ مَنَهَا سُلَيْمَنَ وَكُلَّا ءَاتَيْنَا حُكُمًا وَعِلْمَأْ وَسَخَّرْنَا مُعَ دَاوُودَ ٱلْجِبَالَ يُسَبِّحْنَ وَٱلطَّيْرُ وَكُنَّا فَاعِلِينَ ٥

## **Cardio**



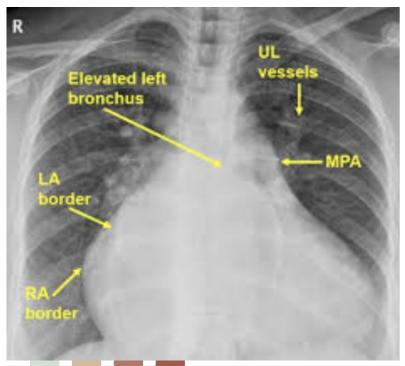


# **Case (1)**





#### Left atrial enlargement



#### **Acyanotic heart diseases:**

↑↑ pulmonary vasculature:

1-ASD (个RA)

2-VSD (个LA)

3-PDA (个LA)

4-ECD



#### **Direct signs:**

Double density sign

Oblique measurement > 7 cm (measured form midpoint of LT main bronchus to the RT border of the LT atrium)

#### **Indirect signs:**

Splaying of the carina, ↑↑ tracheal bifurcation angle (>90)

Elevation of the LT main bronchus

#### Causes:

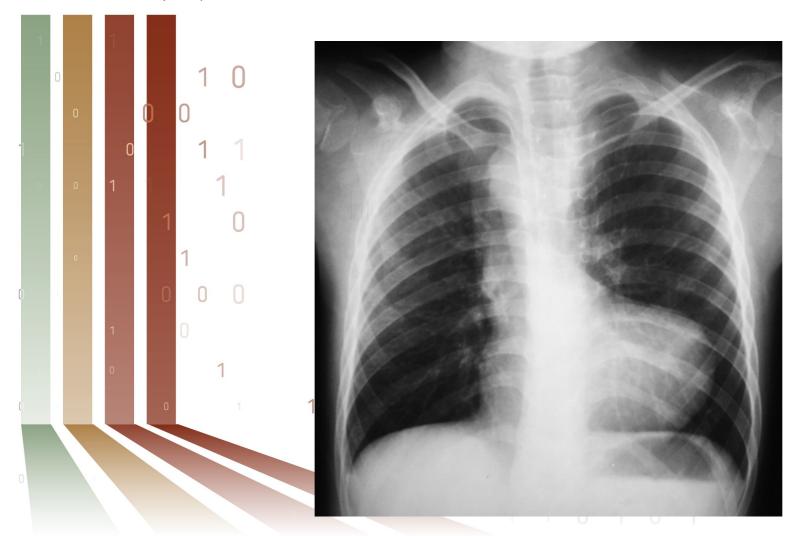
Congenital (VSD/ PDA)

Acquired (mitral stenosis/ mitral regurge/ LV failure/ AF)



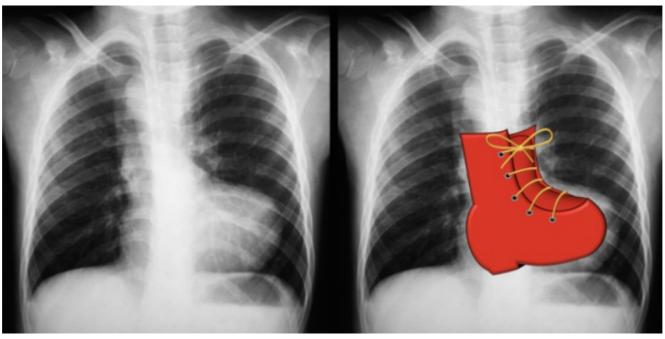
**History:** A 2-years-old girl with cough

# **Case (2)**



#### Tetralogy of Fallot + RT sided aortic arch





#### **Cyanotic heart diseases:**

 $1-\downarrow\downarrow$  pulmonary vasculature with cardiomegaly: Ebstein anomaly

 $2-\downarrow\downarrow$  pulmonary vasculature without cardiomegaly: TOF

3- 个 个 pulmonary vasculature (TGV, Tricuspid A, truncus A, TAPVR, Single V)

#### **Tetralogy of Fallot:**

RT ventricular outflow obstruction

RT ventricular hypertrophy

**VSD** 

Aorta over-riding the VSA

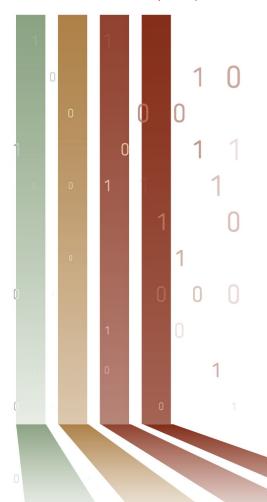
RT sided aortic arch (25% of cases)

#### X-rays:

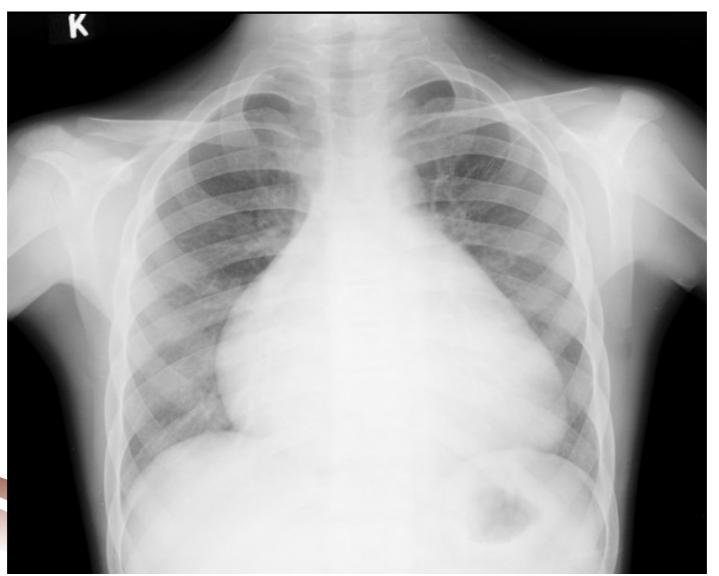
Elevate cardiac apex (boat-shaped heart)

↓ ↓ pulmonary vasculature

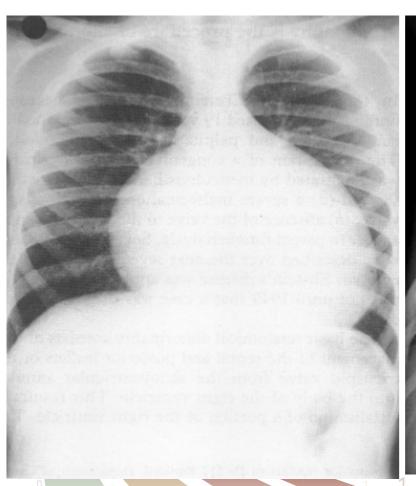
**Case (3)** 



**History:** A 15-years-old male with dyspnea



#### **Ebstein anomaly**





#### **Ebstein anomaly**

↓ ↓ pulmonary vascularity + cardiomegaly + ASD

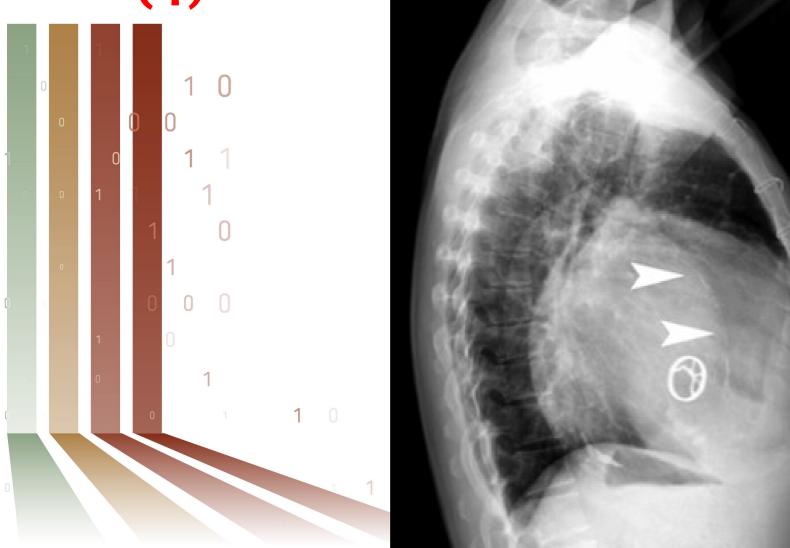
Malformation of the tricuspid valve especially (septal & posterior leaflets) >> apical displacement >> obstruction of the pulmonary valve >> RT ventricular outflow obstruction >> Arterialization of the RV

#### X-rays:

Box-shaped heart

**History:** A 67-years-old female presented with CHF

**Case (4)** 



## Enlarged calcified LT atrium + artificial mitral valve





#### DD:

Enlarged calcified LT atrium:

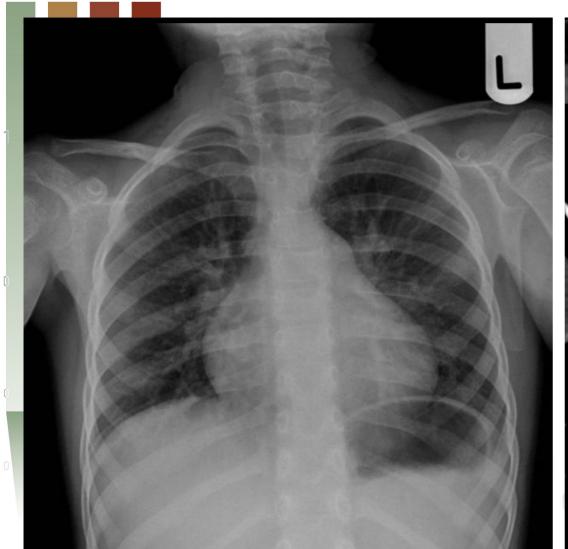
1-Long-standing rheumatic valvular heart disease (e.g. history of mitral valve replacement)

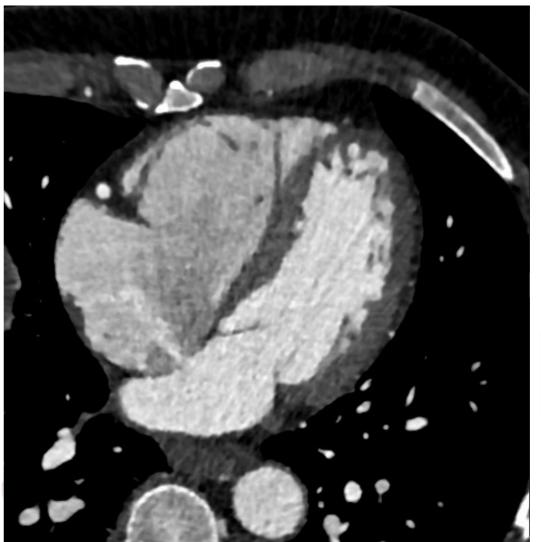
2-Constrictive pericarditis + pericardial calcification (TB)

3-Pericardial effusion

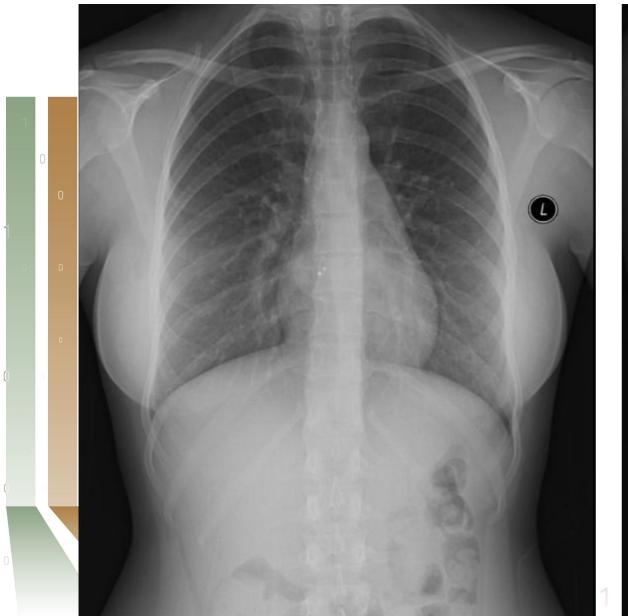
#### **History:** A 15-years-old male presented with shortness of breath

# **Case (5)**





See next images





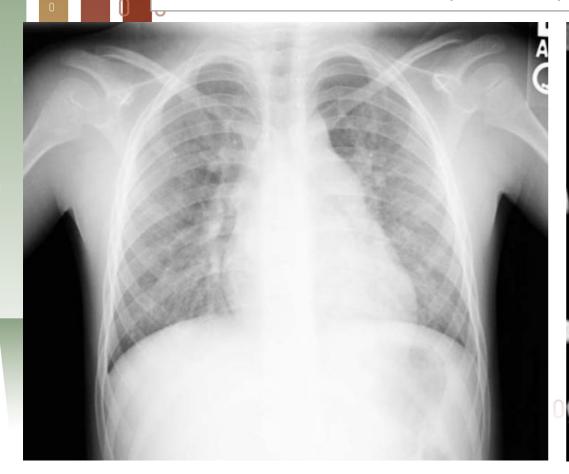
## ASD before and after endovascular treatment

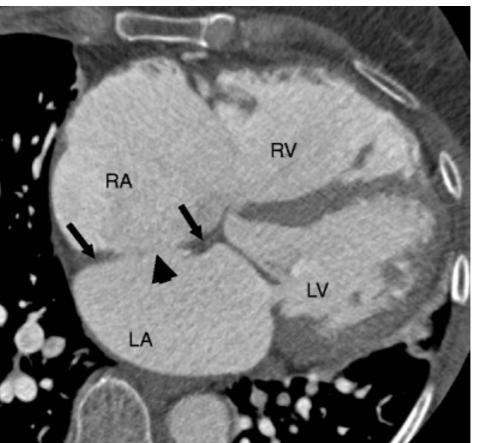
#### **ASD**

#### X-rays:

The heart is slightly larger than normal

Prominence of the central pulmonary vasculature (pulmonary hypertension + its signs)





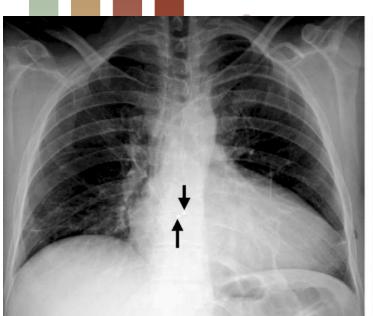
#### **Treatment:**

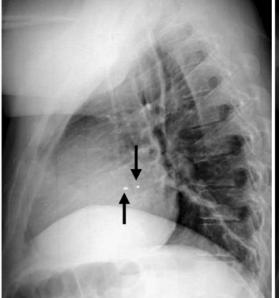
There are many ASD closure devices , most have the appearance of a butterfly

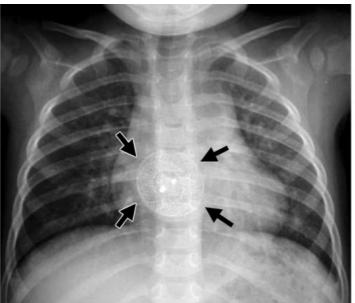
Inserted via endovascular route

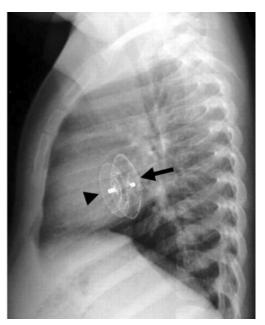
The amplatzer septal occlude is a nitinol double disk shaped device used for percutaneous closure of ASD









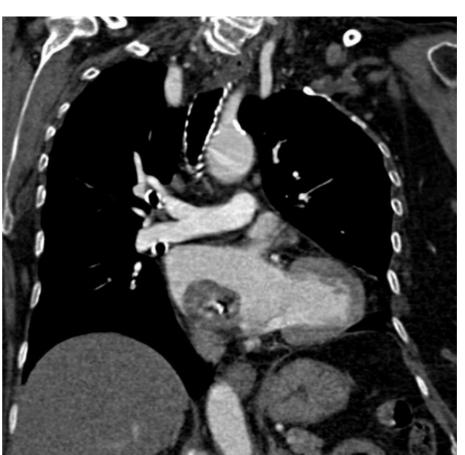


**History:** A 76-years-old female presented with features of an embolic stroke

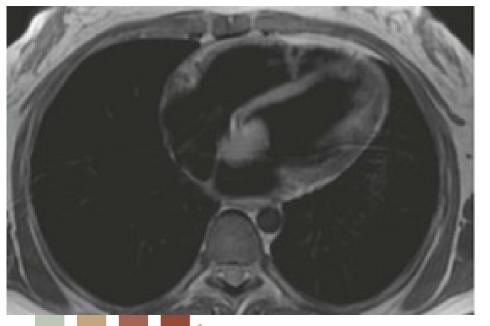


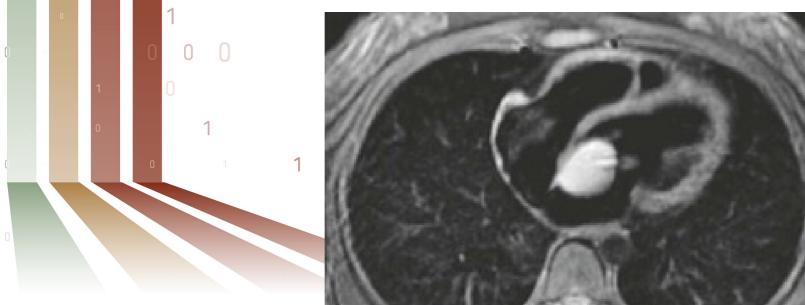


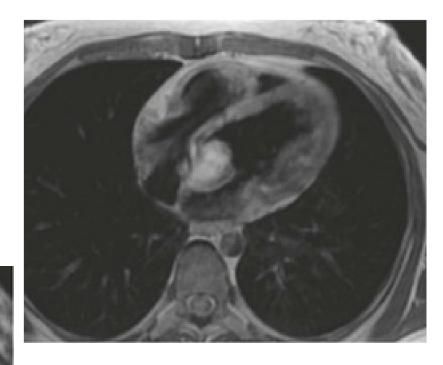




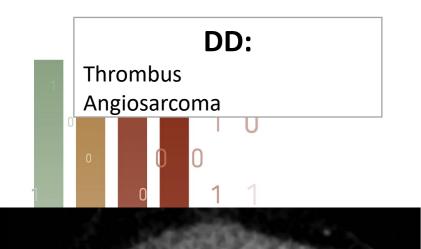
Next step?



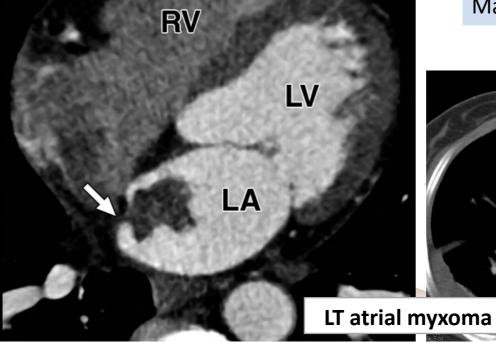




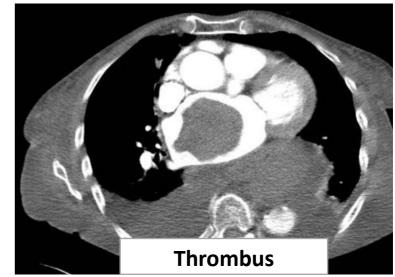
## Left atrial myxoma



	Thrombus	Left atrial myxoma
Origin	Left atrial appendage	Interatrial septum (fossa ovalis)
Complications	Distal embolism: stroke	Cardiac arrhythmia/ embolic complications/ intracranial aneurysm
Enhancement	No	Uptake early (late no ++)
MRI	Low in T2	High in T2
Management	Anticoagulant	Surgical

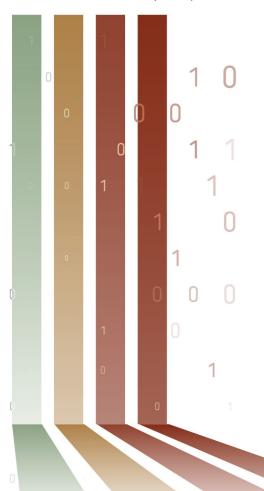






**History:** A 17-years-old female previously healthy, experienced fatigue and dyspnea

## Case (7)





#### **Cardiac angiosarcoma**

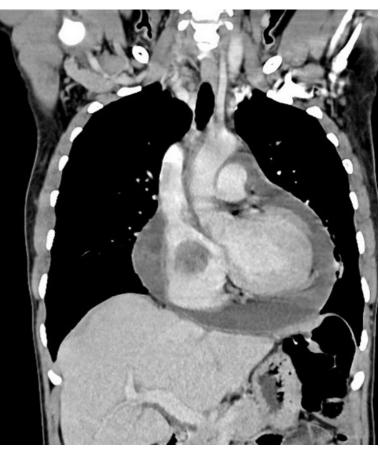
#### In this case:

Infiltrative cardiac expansive lesion, centered on the right atrium, invading the superior vena cava + innumerable solid pulmonary nodules, bilateral, suggestive of involvement secondary dissemination



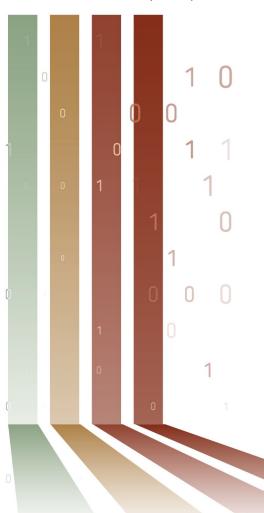






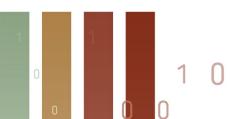
#### **History:** A 54-years-old female presented with chest pain

## **Case (8)**

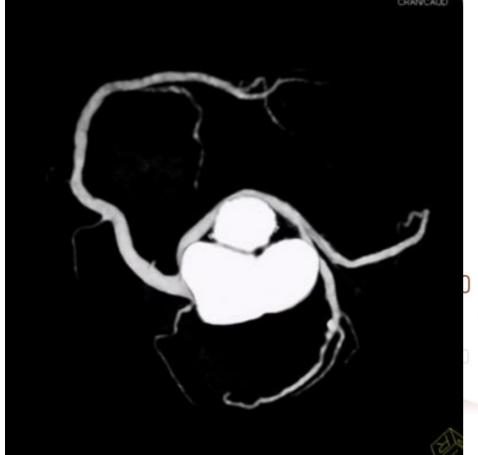


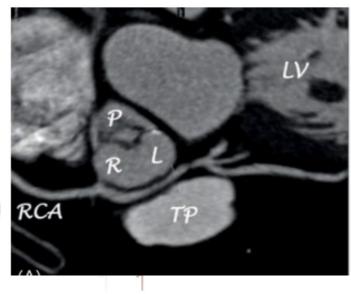


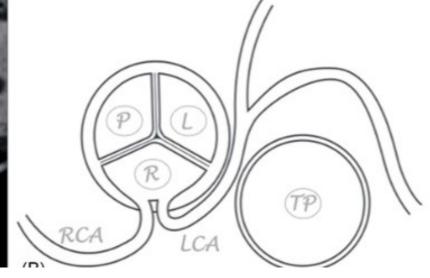
#### Anomalous left main coronary arterial origin



If anomalous left coronary artery arising from RT coronary artery >> more symptoms (sudden cardiac death usually associated with exercise) due to narrow ostium



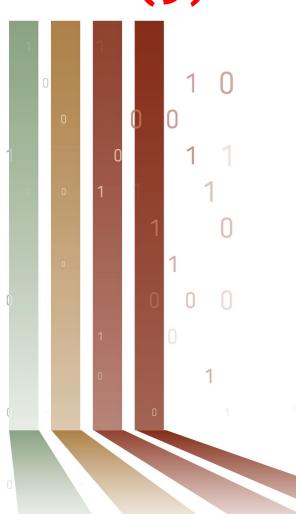


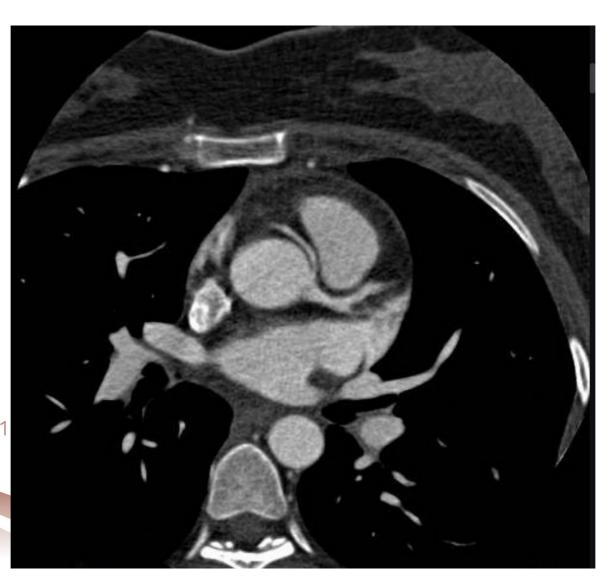


**History:** A 31-years-old female presented with chest pain on exertion, family history of early cardiac deaths



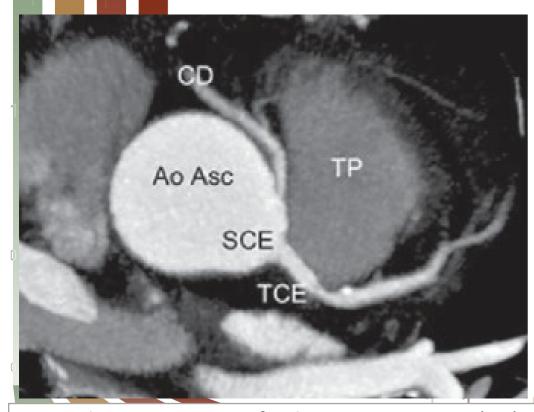
## **Case (9)**





#### Inter-arterial course of right coronary artery

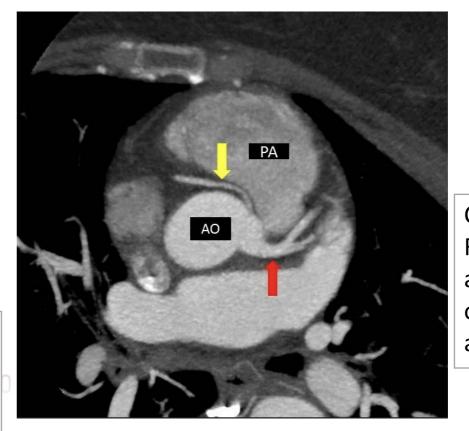
Carries an increased risk of cardiac ischemia, myocardial infarction, and possibly sudden death



Anomalous origination of right coronary artery (CD) from the left coronary sinus (SCE), with interarterial course between the pulmonary artery trunk (TP) and the ascending aorta (Ao Asc) (malignant course)

#### In this case:

The RCA has an aberrant origin from the left coronary sinus and courses in between the ascending aorta & the pulmonary trunk

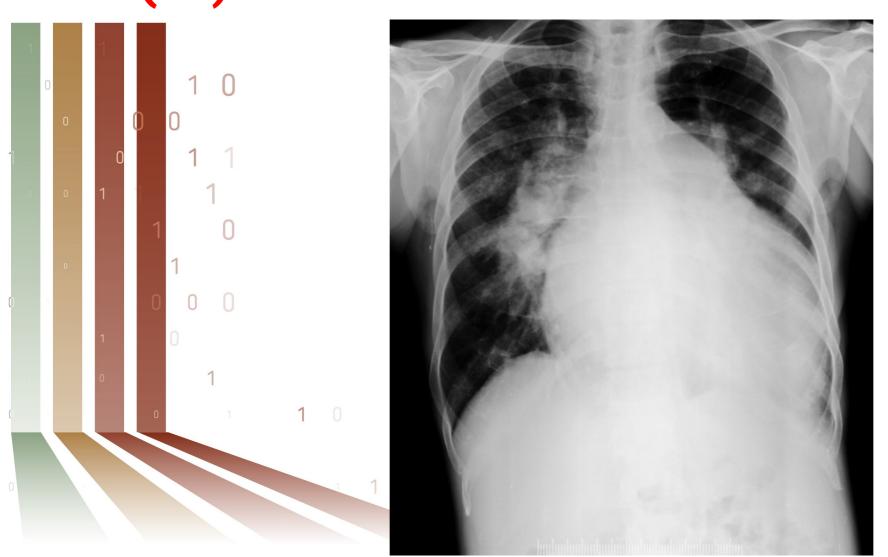


Common origin of RCA & LCA + anomalous origin of RCA between aorta & PA

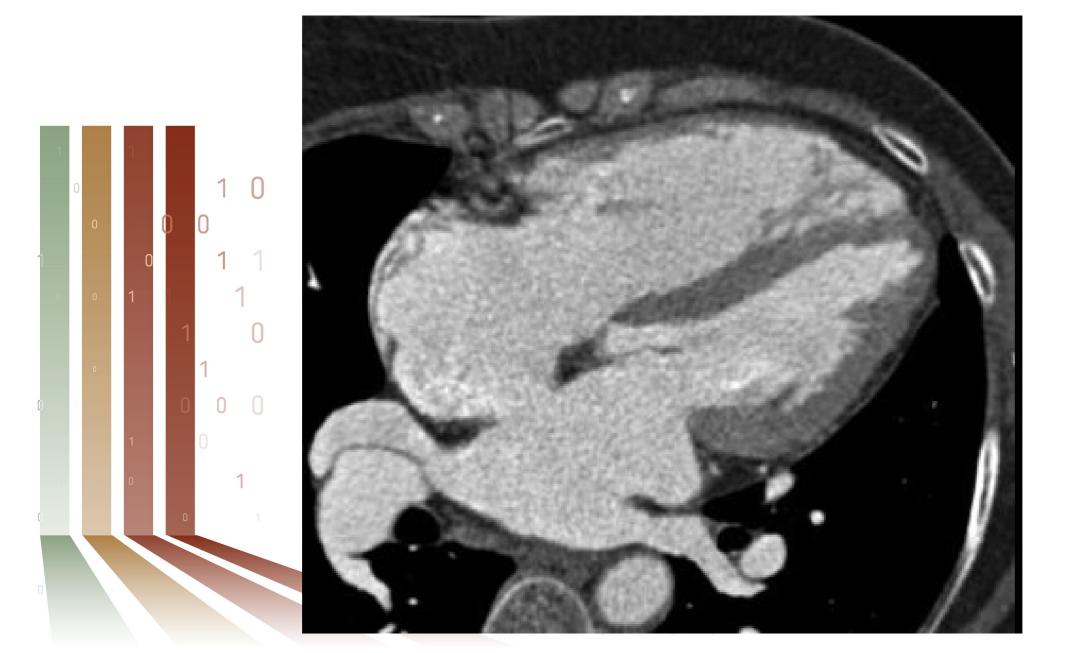


## Case (10)

#### **History:** A 60-years-old male presented with shortness of breath and palpitation



Next step?



## Pulmonary hypertension due to ASD

## **Causes of pulmonary hypertension**

- 1-Idiopathic
- 2-Herediatary
- 3-Drug induced
- 4-Congenital heart disease (ASD/ TOF)
- 5-Connective tissue

(scleroderma)

6-Left heart disease

(Coronary/ hypertension/

DM/ 个个 cholesterol)

7-Lung hypoxia (COPD/

Interstitial lung disease)

#### X-ray findings:

Enlarged PA + pruning of peripheral pulmonary vessels

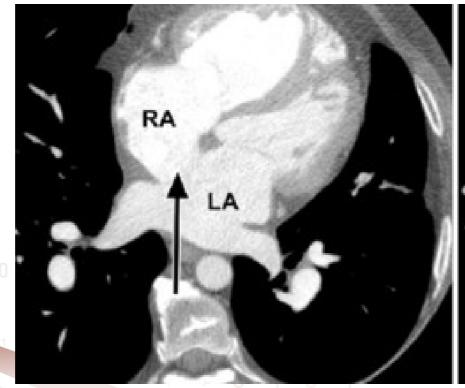
Elevated cardiac apex (RVH)
Enlarged right atrium

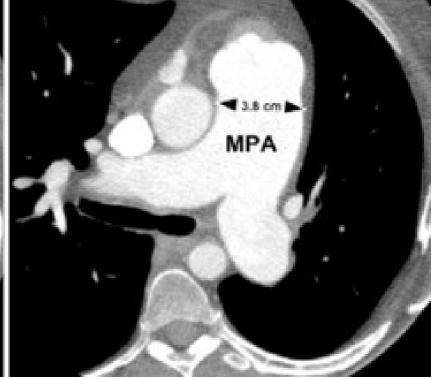
#### **CT findings:**

Main pulmonary artery > 29 mm (> aortic root) PA calcifications Diffuse GGO (centrilobular nodules)

#### In this case:

X-rays: Cardiomegaly + enlargement of bilateral hilar pulmonary vessels (pulmonary hypertension) CT: Confirms the cause of pulmonary hypertension (ASD)





**ASD + Pulmonary hypertension** 

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