



430 Radiology team

Lecture 4

Radiological investigation of the CVS (Cardiology)

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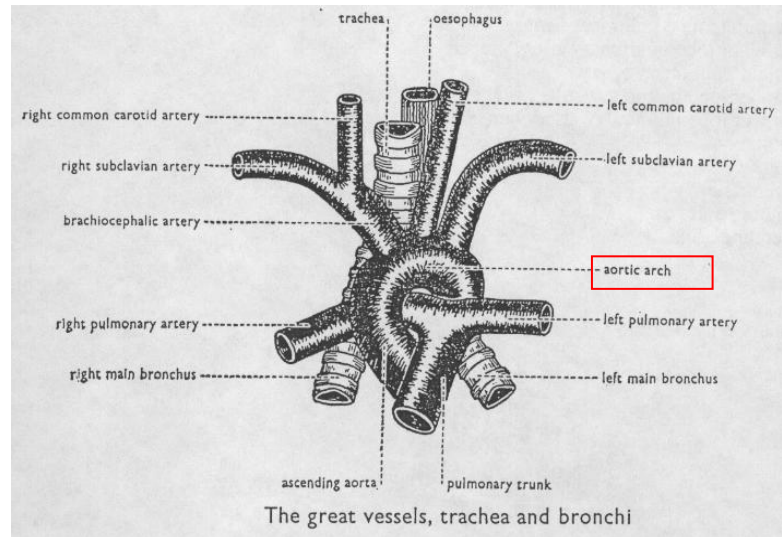
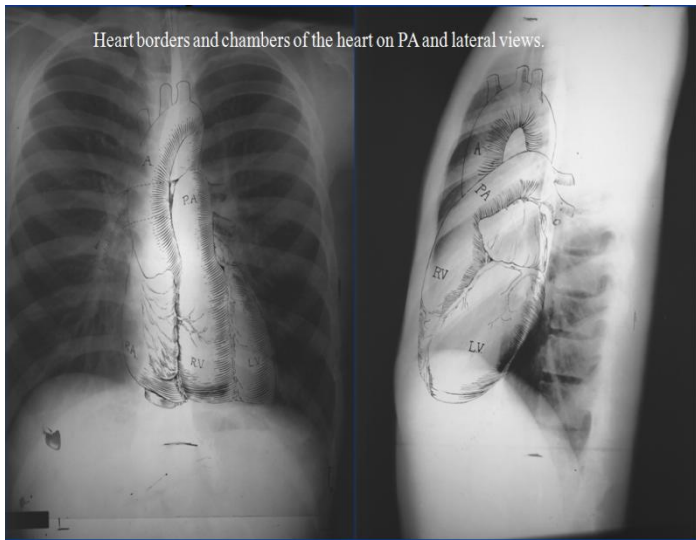
Maha AlKubaidan

Ghadeer AlWuhayd

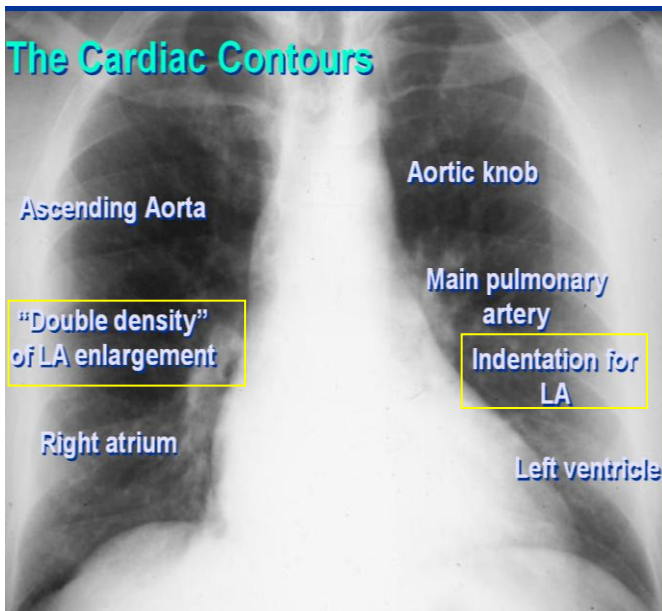
Hanan Alrabiah

❖ Cardiovascular Imaging

- Anatomy on Normal Chest X-Ray



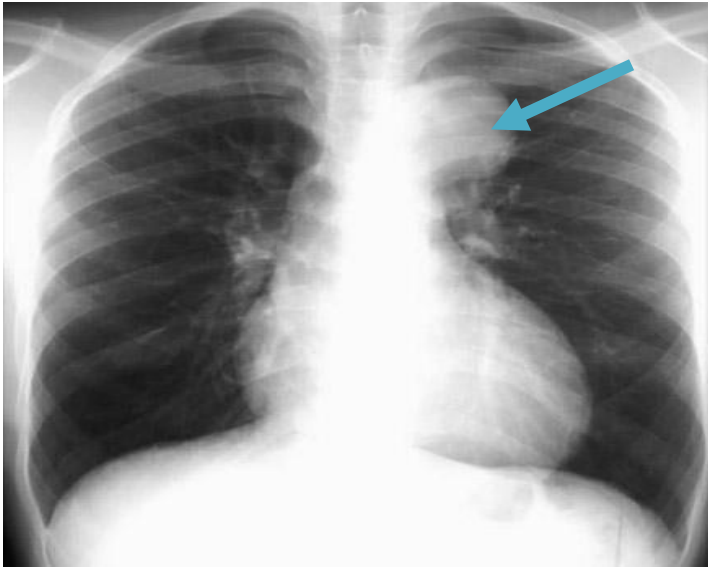
- The Aortic arch/great vessel.



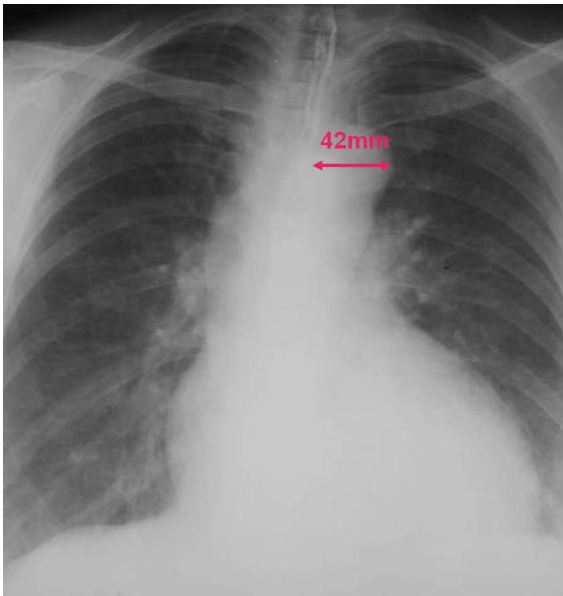
- In normal adult, 2/3 of the heart is located in the left side whereas 1/3 of the heart is in the right side.
- In children, 1/2 of the heart in the left and the other 1/2 in the right side.
- Otherwise than that, it will indicate abnormality.

- Indentation for LA and Double density of LA enlargement are not important

❖ Aortic aneurysm



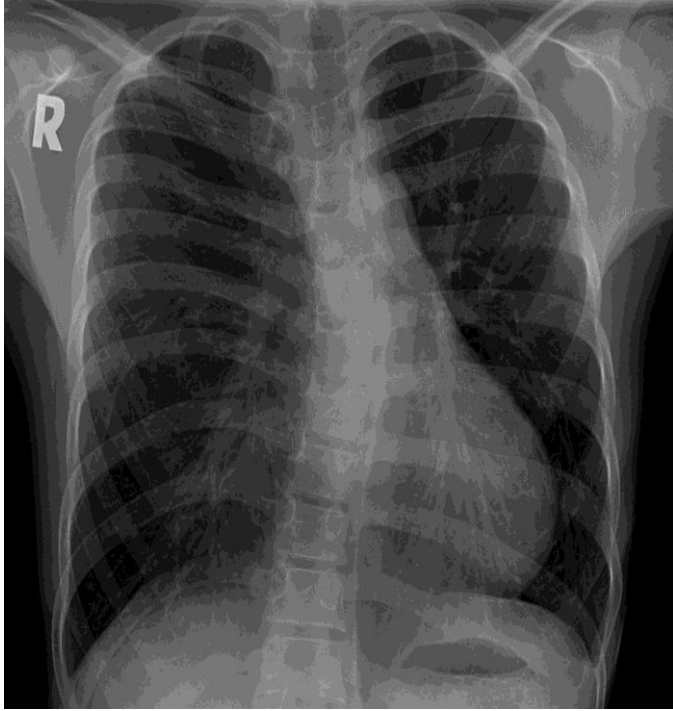
- **Aortic knob/knuckle**
- Normally, the aortic knob is 27mm. If it is more than that, it indicates **Aortic Aneurysm**.



Enlarged with:

- Increased pressure
- Increased flow
- Changes in aortic wall

❖ Cardiac displacement



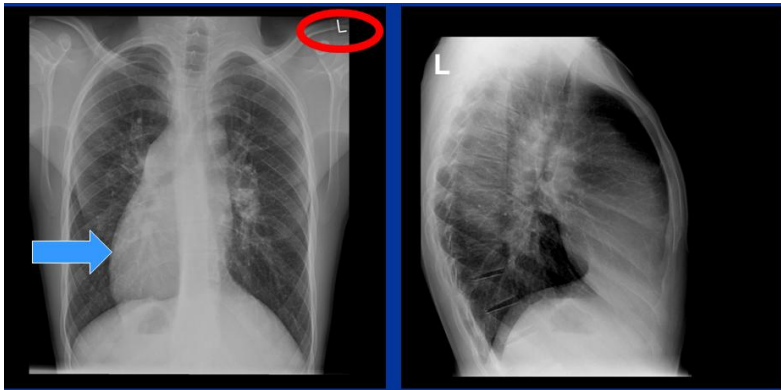
- Normally, the vertebra is mild kyphosis (anterior-posterior kyphosis) (S shaped).
- Any deviation of vertebra to the right or left is scoliosis.
- Here we have a scoliosis deviated to the left. (you have to mention in which side the deviation is)
- The heart is also here deviated → to insure the reason of its deviation we do lateral CXR.



- Lateral view CXR reveals that this Pt is having also a **Pectus Excavatum** → and it is the actual cause of heart deviation in addition to the scoliosis..

❖ Dextrocardia

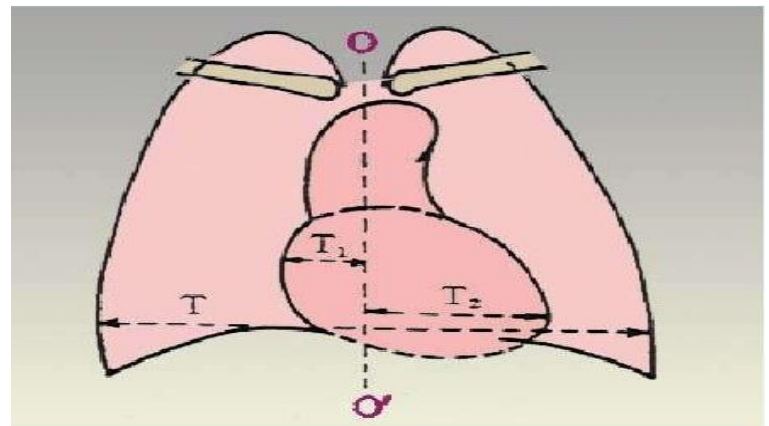
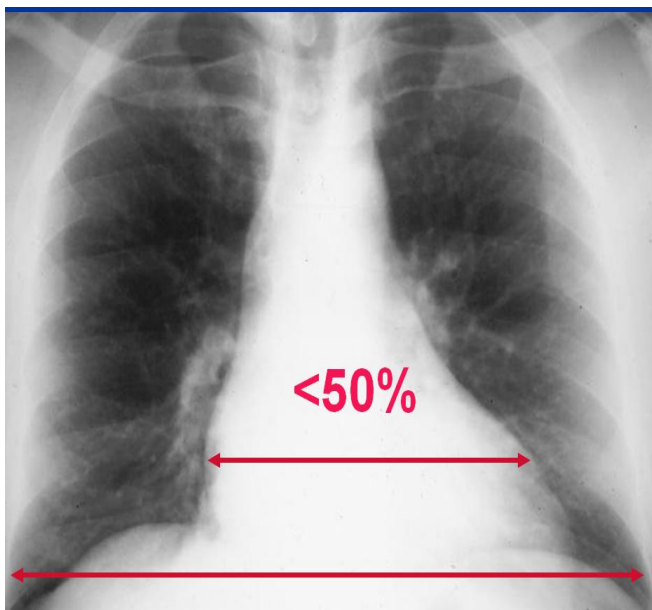
- Is a condition in which the heart is located in the right side.
- Situs inversus → is a condition in which all the organs are shifted to the other side,



- Right diaphragmatic border is lower than the left border because the liver is located here in the left side (Pt has Situs inversus)
- 25% of those patients have congenital heart diseases.

❖ Cardiac Size:

- Cardio-thoracic Ratio:
- It is the widest diameter of the heart compared to the widest internal diameter of the rib cage (it is important to take the most far point in the rib cage)

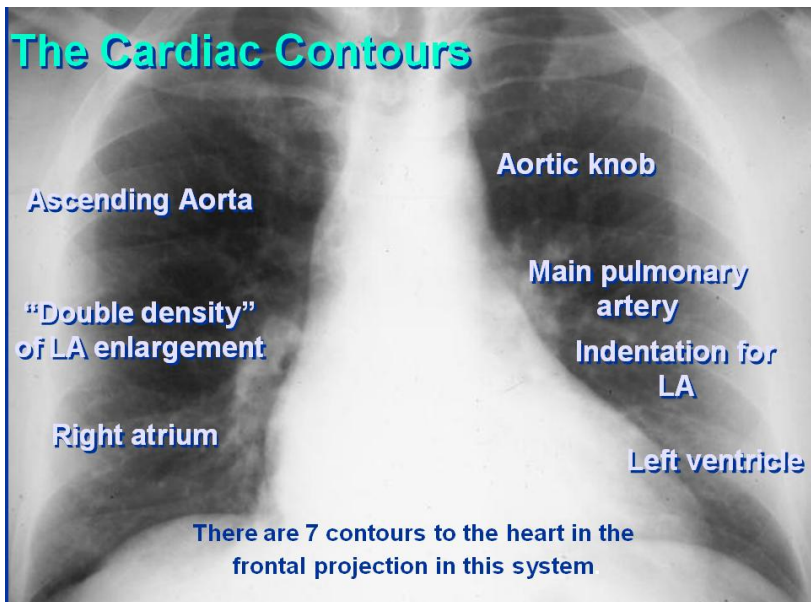


Normal : $C / T \leq 0.5$
Slightly enlarged : 0.51- 0.55
Moderately enlarged : 0.56- 0.60
Massively enlarged : > 0.60

It has to be measured under only PA view.

❖ Anatomy on Normal Chest X-Ray

The Cardiac Contours



Remember

- Aortic knob
- Ascending Aorta
- Main pulmonary artery
- Right atrium
- Left Ventricle

Ascending Aorta

