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Anomalous Origin of Left Pulmonary Artery Without Pulmonary Sling

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ABSTRACT:
A rare case of an anomalous origin of left pulmonary artery without sling formationin a child on computed tomography pulmonary angiogram.

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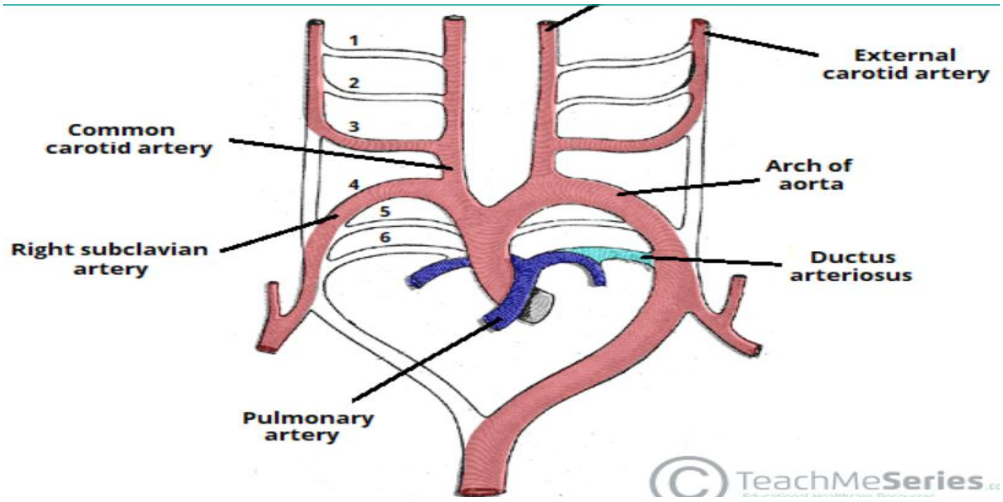
I. Introduction:

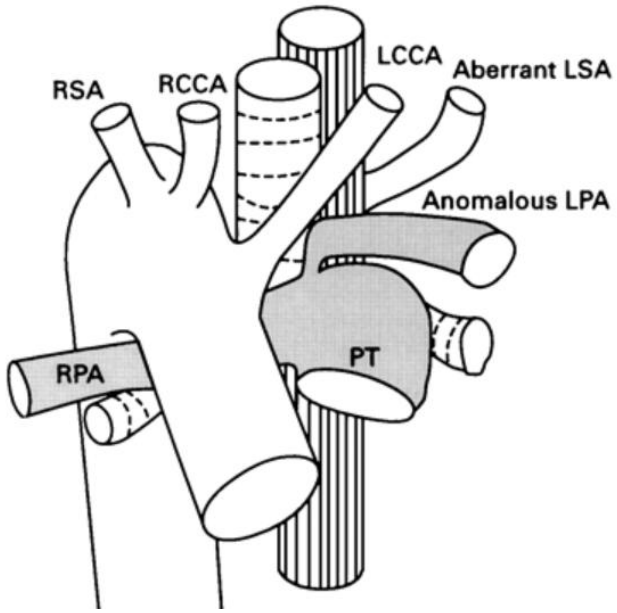
Aberrant Pulmonary artery commonly known as pulmonary sling is an anatomical variant in which left pulmonary artery arises from the right pulmonary artery and passes above the right main bronchus in between the trachea and oesophagus. It may cause compression and focal stenosis of the trachea.

Normally, the pulmonary artery trunk arises from the right ventricle and dividesinto the main right and left pulmonary arteries. The distal parts of the pulmonary arteries develop from the capillaries of their respective lung buds which are then joined with the ipsilateral sixth aortic arches.

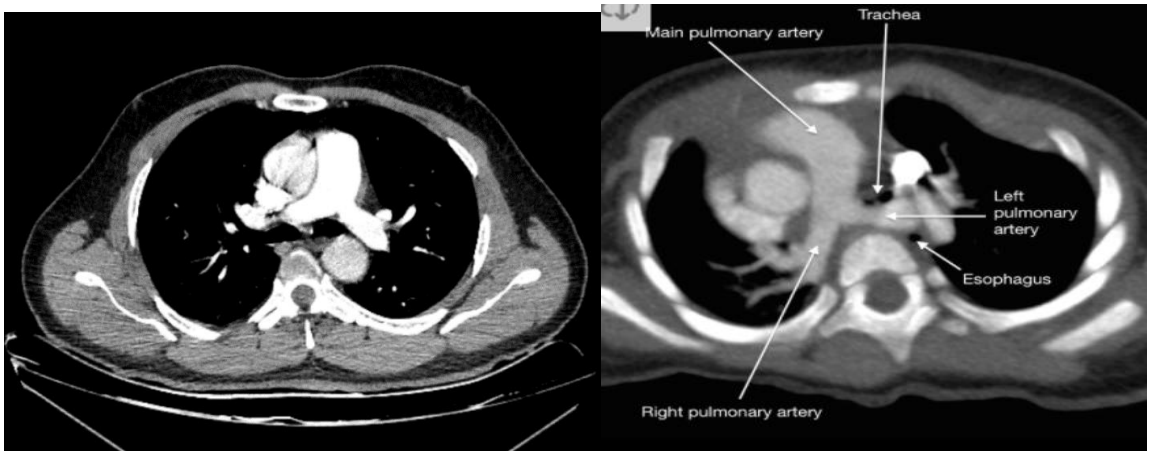
The embryology of the anomalous left pulmonary artery passing dorsally to the trachea is due to the failure of the left lung buds' connection with the left sixth arch. Instead, the connection of the left lung buds occurs with the right sixth arch dorsally to the trachea forming the pulmonary artery sling. If this connection runs ventrally no sling is formed.



Schematic representation of normal right and left pulmonary artery development. Right sixth arch forms the right pulmonary artery. Left sixth arch forms the left pulmonary artery and the ductus arteriosus.



Diagramatic representation of anomalous origin of left pulmonary artery arising above right pulmonary artery.



A **B**

Figure A represents normal bifurcation of Main pulmonary artery into right and left pulmonary artery. Figure B represents the left pulmonary artery between the trachea and oesophagus forming a sling.

II. Case Report:

A 9 year old girl came to paediatric OPD with a complaint of chest pain and difficulty in breathing. On clinical examination respiratory system was unremarkable with no tachypnea or cyanosis noted.

2D ECHO/Colour Doppler was performed for cardiac assessment. Findings of which are described below:

- Significant bilateral branch PA stenosis.
- Normal aortic arch
- Normal mitral and tricuspid valves
- Intact IVS and IAS
- Normal biventricular function

Further evaluation with CT pulmonary angiogram was done for the severityand extent of the PA stenosis.

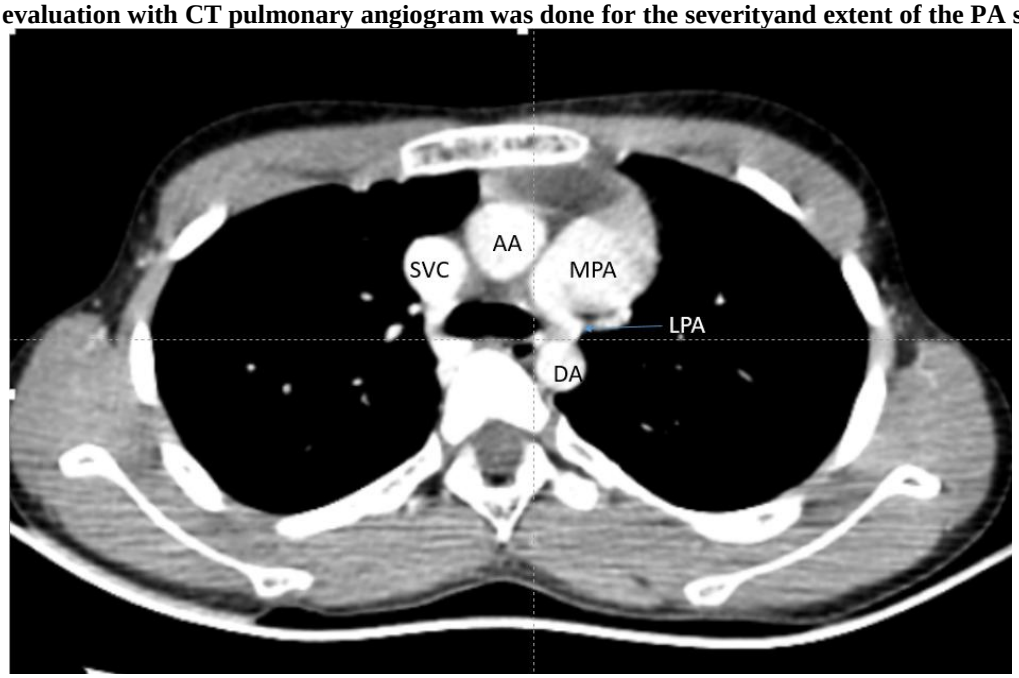


Figure A represents hypoattenuated left pulmonary artery arising above Right Pulmonary Artery

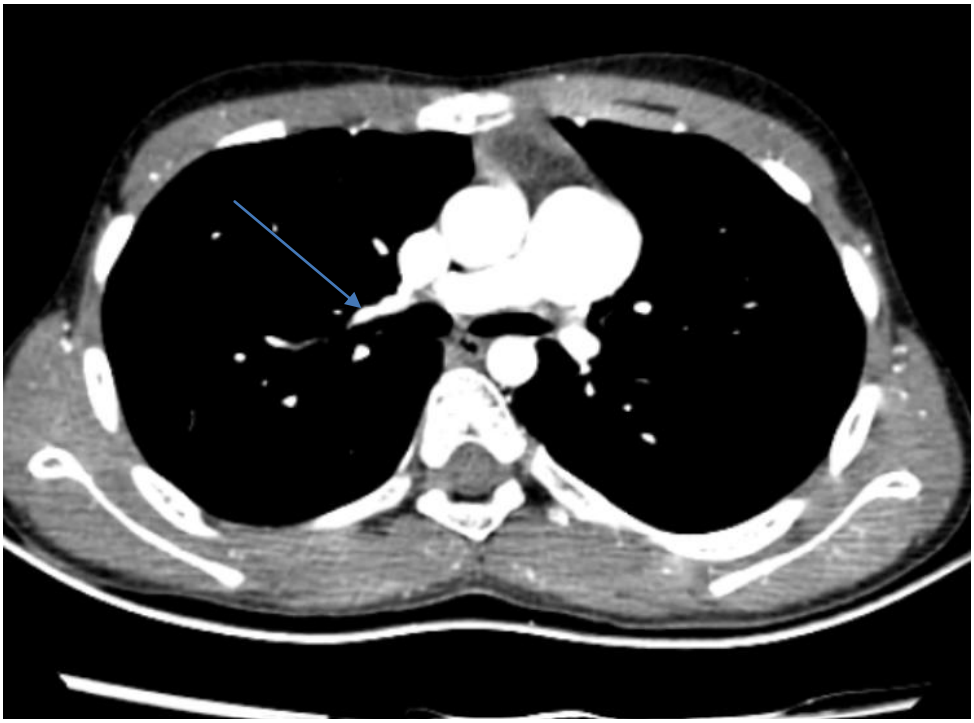


Figure B represents normal origin and calibre of right pulmonary artery

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