

A RARE CAUSE OF HEMOPTYSIS “ANOMALOUS SYSTEMIC ARTERY TO A LUNG”

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ABSTRACT

Bronchopulmonary sequestration represents a wide spectrum of common and rare abnormalities. An aberrant systemic arterial supply to a normal lung with or without bronchial sequestration is one of these. Pryce classified these abnormal lesions. Most of these patients are asymptomatic but as time passes, many patients develop hemoptysis, localized pulmonary hypertension, and eventually high output cardiac failure. For diagnosis and planning of definitive treatment, Multi-detector computed tomography (MDCT) plays an important role in identifying the origin and course of the aberrant artery. Definitive treatment can be endovascular (coiling or ligation) or surgical (lobectomy or segmentectomy).

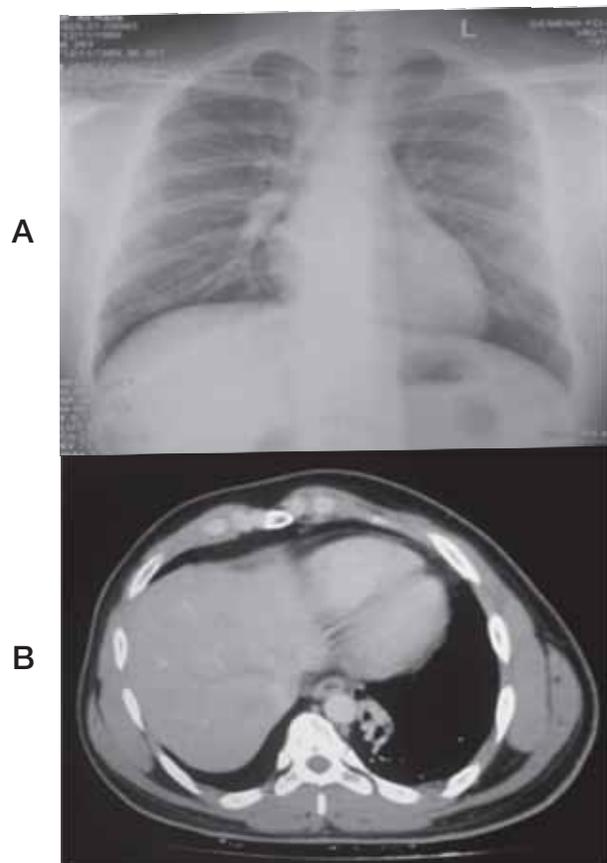
Keywords: Sequestration; hemoptysis; Pryce type 1.

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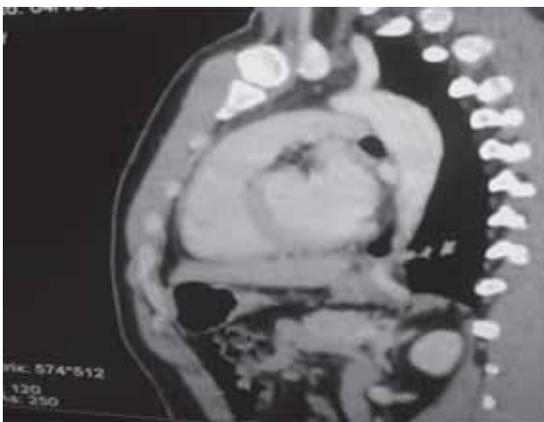
CASE SUMMARY

A gentleman of 26 years presented to pulmonology OPD with complaint of repetitive episodes of hemoptysis from last 3 months. He had no history of fever, cough, chest pain/ trauma or hematuria. Past medical and drug history was insignificant. He never smoked or drunk and denied any pet exposure. Detailed clinical examination was normal at that time. His baseline investigations were done that all came to be normal including TB workup, chest x-ray (image A) and USG abdomen. UGI endoscopy was also done with suspicion of haemetemesis that was also normal. Echocardiography showed all normal parameters except PAP that was 35mmhg (mild pul.hypertension). His CT Scan chest was ordered that reported as “anomalous vessel arising from abdominal aorta with suspicion of sequestration” (image B,C). Keeping in view this report his CT angiography was done that reported as “dilated tortuous artery arising from descending thoracic aorta at level of T-10 vertebra, extending into post.segment of LLL with surrounding soft tissue thickening and atelectasis, Mild cystic and emphysematous changes, findings suggestive of interlobar sequestration.Possibility of AVM less likely” (image D,E). Case was reviewed by thoracic surgeon and of opinion regarding surgical intervention. Ligation of vessel with left lower lobe segmentectomy through VATS was done (<https://www.youtube.com/watch?v=9ckHT-ZdP-s>). Dissected section was sent for histopathology and report was consistent with “sequestration cyst of lung” (image F,G).

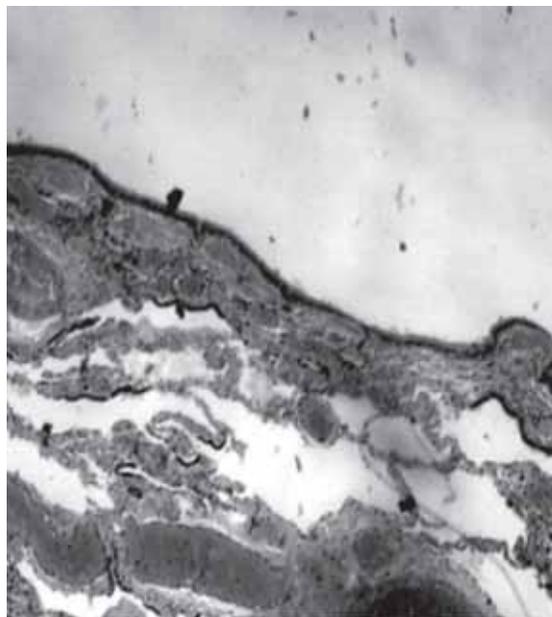
Currently he is symptom free, without any complication and enjoying his life.



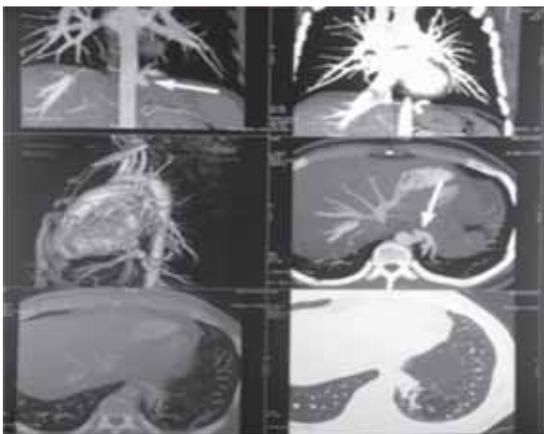
C



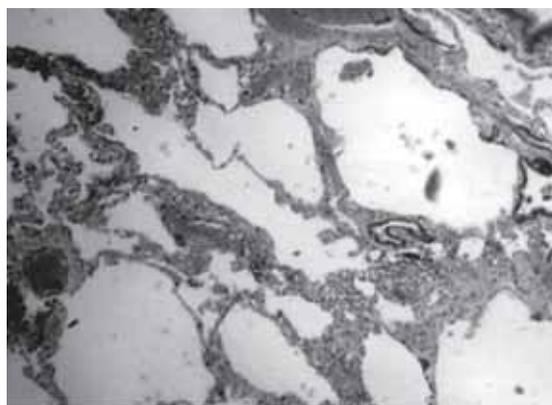
F



D



G



E



,they classified pulmonary sequestration,¹ this abnormality is classified as Pryce type 1. In type 2, the systemic artery supplies both abnormal and normal lung without any communication with the tracheobronchial tree. Only non-communicating abnormal lung receives the aberrant systemic artery in type 3. Embryologically, it is due to failure/incomplete regression of the primitive aortic branches to the developing lung bud³.

DISCUSSION

Systemic arterial supply to a lung with normal bronchial communication and without pulmonary or cardiovascular abnormalities is a rare congenital abnormality¹. It is of two types: systemic arterial supply associated with normal pulmonary artery (dual supply) and isolated systemic arterial supply to normal lung (ISSNL)². According to the Pryce et al

The left lower lobe (basal segment) are the most commonly affected site^{4,5}. The most common origin of systemic artery is from the thoracic aorta^{6,7}, but can also arise from abdominal aorta or celiac axis. Usually these patients are asymptomatic⁸. But many patients presented with hemoptysis in multiple case reports⁷ and similarly in our case. Technique used for diagnosis also similar as used in old papers⁷. Our case was treated with surgical intervention VATS as in previously publications by multiple authors⁷.

CONCLUSION

High degree of suspicion is needed to diagnose an anomalous systemic artery to a normal lung in a patient with otherwise non-explained hemoptysis. An excellent non-invasive modality for establishing the diagnosis is CT Angiography. The condition can be treated by VATS, endovascular techniques or surgery.

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