INTRODUCTION

Pulmonary vein varix is a rare vascular malformation consisting of abnormal dilation of a segment of pulmonary vein. It is commonly seen in the right lower lobe.\(^1\) It is classified into three types structurally: saccular, tortuous, and confluent.\(^2\) Pulmonary vein varix can be suspected on chest X-ray. Echocardiography, helical CT angiography and MR angiography are non-invasive and sensitive imaging modalities for the diagnosis of pulmonary varices. Conventional angiography is reserved for doubtful cases only.

This case report describes pulmonary varices as a cause of hemoptysis in an adolescent boy, which was diagnosed on multislice CT and confirmed on angiography.

CASE REPORT

A 17-year-old male presented in medical outpatient department with complaint of sudden haemoptysis containing fresh blood which was copious in amount. On clinical examination, there was decreased breath sound and crepitations in left lower chest. No other general or systemic abnormality was found. Endobronchial examination revealed fresh blood as well as clots in left lower lobe bronchus. His laboratory investigations showed TCL of 8 x 10^9/L; hemoglobin of 14 g/dl; platelet count of 264 x 10^9/L, PT of 13 seconds and PTTK of 33 seconds. INR and bleeding and clotting times were within normal range. On radiological examination, his chest X-ray showed inhomogeneous haze in left lower zone representing consolidation/haemorrhage. Contrast enhanced helical CT scan of chest was done which showed area of increased attenuation with air broncho-grams involving the medial, lateral and posterior basal segments of left lower lobe. Abnormally dilated tortuous vessel draining into the inferior pulmonary vein was also noted in the medial basal segment of left lower lobe (Figure 1). On the basis of history, clinical examination, laboratory investigations and radiological findings the initial diagnosis of pulmonary arteriovenous malformation (AVM) with pulmonary vein varix kept in differential. Conventional angiography in venous phase shows abnormally dilated vein on left draining into left inferior pulmonary vein (Figure 2).
angiography done at The Aga Khan University Hospital, Karachi, confirmed it to be left pulmonary vein varix draining into the inferior pulmonary vein in venous phase (Figure 2). Patient was advised left lower lobe resection to prevent a recurrence or life threatening consequence.

**DISCUSSION**

Pulmonary vein varix is a rare vascular malformation. It may be congenital or acquired. Acquired factors such as pulmonary venous hypertension secondary to mitral regurgitation or less commonly due to mitral valve stenosis are associated with pulmonary varices in about 50% of cases and may reveal congenital weakness of the walls of veins. Patients with pulmonary vein varices are mostly asymptomatic and detected incidentally with an abnormal structure on chest radiograph. Some patients may have haemoptysis. Other rare manifestations of this condition have been described, such as dysphagia or the presence of middle lobe syndrome secondary to extrinsic compression.

Pulmonary angiography has been the main diagnostic tool but it is invasive and the patients refuse this examination. Echocardiography is useful for detecting the varices only close to the heart. MR angiography and helical CT angiography can be used in the diagnosis of pulmonary varices. Contrast-enhanced CT allows for non-invasive diagnosis of pulmonary varices when it shows an enlarged vein draining into the left atrium. However, axial CT images are sometimes difficult to analyze because the malformation is complex and depicted on several contiguous slices. In such cases, spiral CT with 3D reconstructions offers the opportunity of clarifying the anatomy. Volume rendering has the advantage over maximum intensity projection (MIP) algorithms due to spatial resolution between displayed structures. 3D surface-shaded rendering allows the display of the entire CT data into 3D images.

To conclude, pulmonary varix is a rare cause of haemoptysis. Helical multislice CT angiography is the non-invasive and sensitive imaging modality for diagnosis of pulmonary varix. Whenever there is clinical suspicion of pulmonary varix, the patient should be examined with this modality in both pulmonary arterial and venous phases as done in this patient.

**REFERENCES**