

PICTORIAL

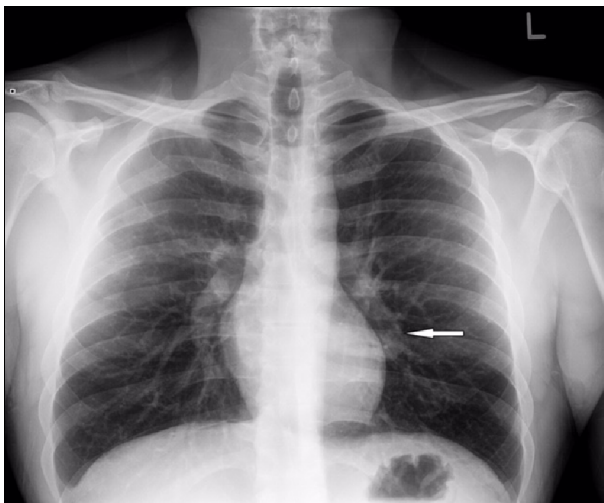
**LEFT UPPER LOBE PULMONARY VEIN TRAVERSING THE LEFT OBLIQUE FISSURE-A RARE, UNSEEN ANATOMIC VARIANT**

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A 38-year-old African American male patient presented to the emergency department with complaints of shortness of breath for 1 hour. The patient was a crack cocaine addict. His physical examination revealed findings consistent with shortness of breath but the chest X-rays picture was unusual. A CT scan of the chest revealed left upper lobe superior pulmonary vein crossing the left oblique fissure and draining into the left atrium which is a deviant from the usual normal anatomy and unreported till now.

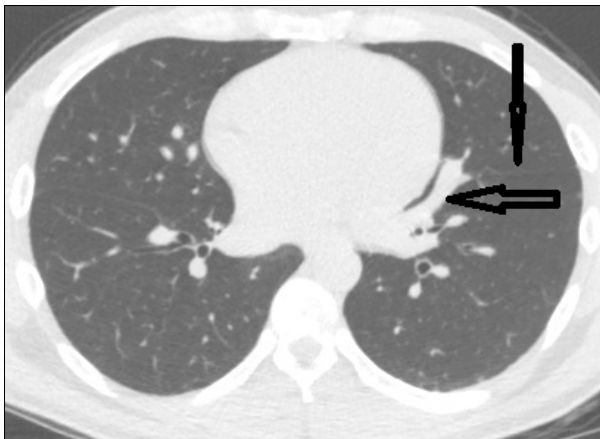
**Keywords:** Left pulmonary vein; Left Oblique fissure; Anatomic variant, rare.



**Figure-1:** Chest x-ray (PA view) showing an ill-defined opacity adjacent to the left heart border.



**Figure-2:** Chest x-ray (lateral view) showing the curvilinear opacity.



**Figure-3:** (a) Chest CT axial view (b) sagittal view- demonstrating the left upper lobe pulmonary vein (horizontal arrow) crossing the left oblique fissure (vertical arrow).

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## CASE DESCRIPTION

A 38-year-old African American male patient presented to the emergency department with complaints of shortness of breath for 1 hour. He reported using crack cocaine 2 days prior to presentation. Physical examination revealed clear lung fields with no chest wall tenderness. Auscultation of the heart demonstrated normal S1 S2. Vital signs were as follows: temperature-36.40c, pulse-84 beats/min, respiratory rate-54 breaths/min, oxygen saturation-98%, blood pressure-124/88 Hg. Remaining physical examination was unremarkable. A chest x-ray was advised which revealed an ill-defined opacity adjacent to the left heart border on the posteroanterior (PA) view (Figure-1) and a curvilinear opacity on the lateral view (Figure-2). This piqued our interest and a Computed Tomography (CT) chest was performed for further evaluation which revealed the left upper lobe superior pulmonary vein crossing the left oblique fissure and draining into the left atrium (Figure 3a & 3 b). The patient improved symptomatically after a few hours and no longer complained of shortness of breath. The patient was hence discharged and advised against further use of crack cocaine and instructed to return if his symptoms worsened.

## DISCUSSION

Partial anomalous pulmonary venous return (PAPVR) is a condition in which few of the pulmonary veins drain into a systemic vein or right atrium instead of the left atrium. The prevalence of this condition ranges from 0.4–0.7 %.<sup>1</sup> Scimitar syndrome is a variant of PAPVR in which part or even the whole of right lung is drained by the right

pulmonary veins into the IVC. In a left sided scimitar, which is a variant of PAPVR, the left pulmonary veins drain into the Inferior Vena Cava.<sup>2</sup> Total anomalous pulmonary venous return (TAPVR) consists of pulmonary veins draining into the right atrium instead of the left atrium. Marison *et al* divided the pulmonary drainage pattern on the right into 6 patterns and 2 patterns on the left.<sup>3</sup> In our patient the left superior pulmonary vein showed a very peculiar drainage pattern in which a curvilinear route was taken traversing the left oblique fissure and joining the base of the inferior left pulmonary vein, finally draining into the left atrium which differs from the normal anatomy wherein the superior left pulmonary vein drains into the left atrium above the oblique fissure, hence this anatomic variant caught our attention. To the best of our knowledge, this is the first case of its type to be reported in literature. The rare anatomic variant encountered in our patient is the first of its kind to be reported and can be noted and expected by a radiologist, pulmonologist or a cardiothoracic surgeon especially while performing a surgery involving pulmonary veins directly or indirectly.

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