



UNIVERSITY of  
**ROCHESTER**  
MEDICAL CENTER

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**DEPARTMENT OF IMAGING SCIENCES**

**Imaging Sciences Interesting Cases**

**CASE 30**

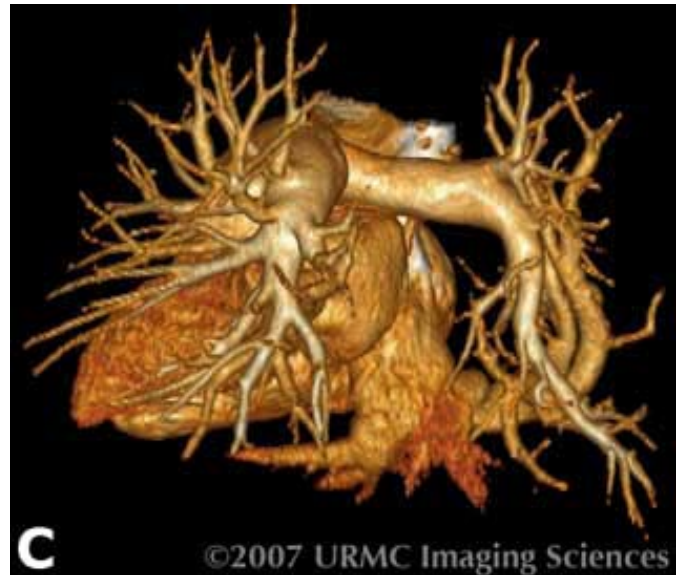
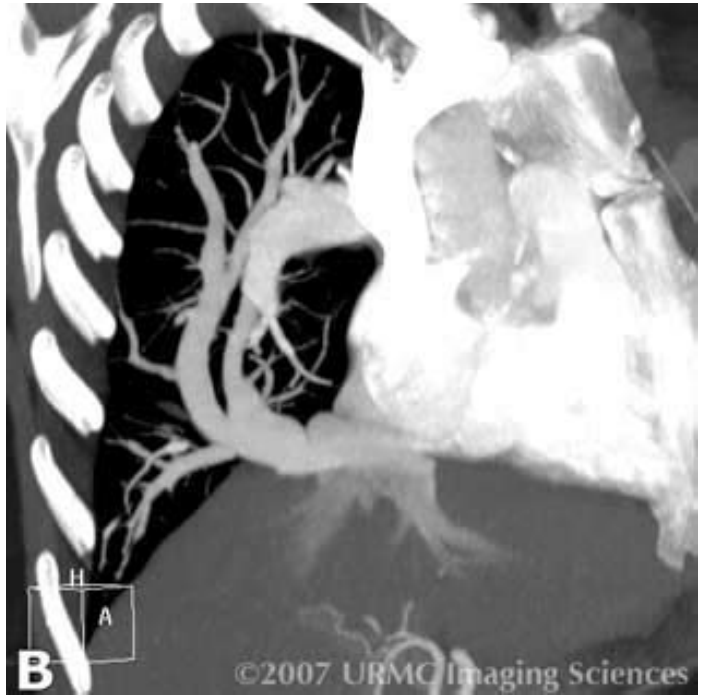
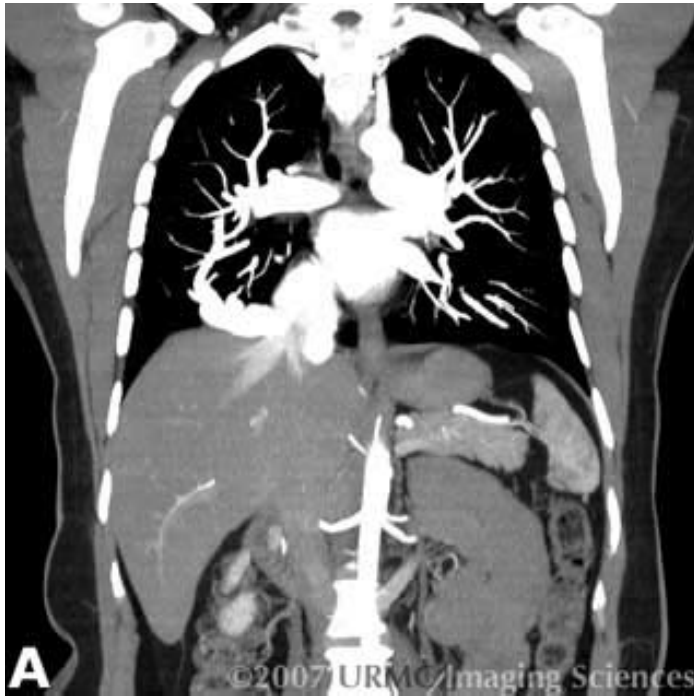
**Nate Johnson, MD**

**CLINICAL PRESENTATION:** A 56-year-old asymptomatic female s/p cardiac catheterization with incidental finding of abnormal anatomy during catheterization.

**IMAGING FINDINGS:**



**Figure 1** - Radiopaque tubular structure in the right lower lung zone in the shape of a Scimitar.



**Figure 2A-C** - Pulmonary veins draining into the inferior vena cava.

**DIAGNOSIS: Partial anomalous pulmonary venous return**

**DISCUSSION:** The prevalence of partial anomalous venous return is estimated at 0.4-0.7% in the United States, although the prevalence increases in patients with atrial septal defect. Presenting symptoms include fatigue, stunted growth, exercise intolerance, atrial fibrillation and dyspnea with an average presenting age before 30 if the shunt is large. If the shunt is small a patient may be asymptomatic as is our patient. The most common radiologic finding in partial anomalous venous return is the “Scimitar” seen in this case. It represents an abnormal pulmonary vein which flows directly into the IVC. This shadow is identified to the right of the heart border. Another common radiologic clue is displacement of the heart to the right. The etiology of this finding is hypoplasia of the right lung and right pulmonary artery that are frequently seen in this syndrome. Other radiologic clues include an enlarged right heart border and increased pulmonary vascular markings from an increased load on the right heart secondary to the shunt with the associated atrial septal defect. If a “Scimitar” is identified on plain film the usual next step in work-up is to obtain an echocardiogram. This can both assess the anatomy of the venous return and screen for the associated atrial septal defect. Other useful tests include CT and MRI as they provide further assessment of the vascular anatomy. It is important to fully delineate the anatomy since surgical correction is an option in some

symptomatic patients. The goal of surgery to divert the anomalous venous flow into the left atrium.

**REFERENCES:**

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