Three-dimensional computed tomography reveals anatomical variant of meandering pulmonary vein

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Case 1: a 38-year old man was admitted for treatment of a pulmonary arterio-venous malformation (Fig. 1).

Case 2: a 43-year old man in whom plain chest CT revealed a suspected pulmonary arterio-venous malformation (Fig. 2).

In both cases, three-dimensional computed tomography (3D-CT) clearly demonstrated the meandering pulmonary vein and allowed us to avoid unnecessary surgery.

Figure 1: 3D-CT demonstrated an enlarged anomalous left upper pulmonary vein (SPV) showing an extremely unusual course with continuity to the inferior pulmonary vein (IPV). The left pulmonary circulation was normal. Showing incomplete lobulation, a meandering pulmonary vein perfused the upper lung field. The very thin left superior pulmonary vein appeared to perfuse only the lingular segment.

Figure 2: 3D-CT demonstrated a meandering pulmonary vein forming a loop, and draining into the superior pulmonary vein. It resembles a scimitar vein, but ultimately drains normally into the left atrium. The inferior pulmonary vein appeared normal. SPECT/CT demonstrated a defect in the S3/S4 area of the left lung. The area of the defect corresponded to the loop formed by the meandering pulmonary vein. It was suspected that within the loop no blood was supplied by the pulmonary circulation.

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