A 30-year-old woman was referred to our department for multidetector computed tomography (MDCT) with a complaint of dyspnea. Her chest radiography findings were unremarkable. Wide area detector CT Angiography and contrast-enhanced CT scan revealed an enhancing cluster of tubular structures in the inferior lingular segment of the left upper lobe [1, 2]. Coronal maximum intensity projection (MIP) (Figure A) and three-dimensional volume-rendered CT images (Figures B, C) revealed a Pulmonary Arteriovenous Malformation PAVM with a feeding artery, an aneurysmal part, and a draining vein.

Pulmonary arteriovenous malformation is an abnormal communication between the pulmonary artery and the pulmonary vein. These vascular malformations are usually congenital in origin; however, they may be acquired in a variety of conditions, such as hepatic cirrhosis, schistosomiasis, mitral stenosis, trauma, actinomycosis, and metastatic thyroid carcinoma. PAVMs are frequently visualized in hereditary hemorrhagic telangiectasia (HHT) [3]. It is reported that at least 33% of patients with a single PAVM and at least 50% of patients with multiple PAVMs have HHT [4]. Pulmonary arteriovenous malformations are often unilateral. Although PAVMs can potentially affect any part of the lung, there is a recognized predilection toward the lower lobes (50-70%) [5]. Patients with PAVMs may have a variety of complications, including cyanosis (due to the right-to-left shunt), high-output congestive cardiac failure, polycythemia, and paradoxical cerebral embolism [6]. Treatment options include trans-catheter coil embolization and surgical resection.

A number of modalities are available for the diagnosis of PAVMs, including contrast echocardiography, radionuclide perfusion lung scanning, computed tomography (CT), magnetic resonance imaging (MRI), and pulmonary angiography, which is the “gold standard” modality [7].

Because of its noninvasive nature, CT is often the diagnostic imaging modality of choice. The characteristic presentation of a PAVM on non-contrast CT is either a homogeneous, well-circumscribed, non-calcified nodule measuring
up to several centimeters in diameter or the presence of a serpiginous mass that is connected with blood vessels [8]. Occasionally, associated phleboliths may present as calcifications. Contrast injection demonstrates enhancement of the feeding artery, the aneurysmal part, and the draining vein on early-phase sequences. Multidetector CT is a reliable tool for diagnosing PAVMs.

References