J Bras Pneumol. 2024;50(1):e20240023
https://dx.doi.org/10.36416/1806-3756/e20240023

Arteriovenous malformation

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A 37-year-old woman presented with a three-day history of cough and fever. A chest X-ray showed a nodule at the right lung base. CT confirmed the finding and also showed vessels intimately related to the nodule (Figure 1). The final diagnosis was arteriovenous malformation.

A pulmonary nodule is defined as a focal rounded opacity measuring up to 3 cm in diameter. An opacity greater than 3 cm in diameter is called a mass, and an opacity less than 1 cm in diameter is called a small nodule. Pulmonary nodules may be solitary or multiple, and they may have soft- tissue, fluid, calcium, air (cavitated nodules), fat, or ground-glass density. A solitary pulmonary nodule is a frequent problem for radiologists and pulmonologists, given the possibility of numerous benign and malignant etiologies. The detection of a solitary pulmonary nodule on imaging is always worrisome because one of its most common etiologies is bronchogenic carcinoma. CT is extremely important in evaluating the morphological features of such a nodule in search of characteristics that may suggest benignity. Some criteria that are suggestive of benignity include evidence of nodule stability for more than 2 years, presence of fat, or presence of specific patterns of calcification.[1]

Pulmonary arteriovenous malformations (PAVMs) are abnormal connections between the pulmonary artery and pulmonary vein, bypassing the normal capillary bed, causing a right-to-left shunt. The majority of PAVMs are associated with hereditary hemorrhagic telangiectasia (also known as Osler-Weber-Rendu syndrome), an autosomal dominant disorder that is characterized by arteriovenous malformations in multiple tissues and organs. PAVMs can be divided into simple and complex depending on the number of feeding pulmonary arteries. PAVMs may be asymptomatic or present with symptoms of dyspnea secondary to hypoxemia, sequelae of paradoxal embolization, or rupture. Epistaxis is the most common symptom, seen in nearly all adults with hereditary hemorrhagic telangiectasia. CT is the method of choice for diagnosing PAVMs. The classic CT feature of a PAVM is that of a well-defined peripheral nodule, which can be rounded or multilobulated, with one feeding artery and one or more draining veins. The draining veins are typically larger than the feeding arteries. Maximum intensity projection and three-dimensional reconstructions can help delineate the vascular anatomy of such lesions.[2,3]

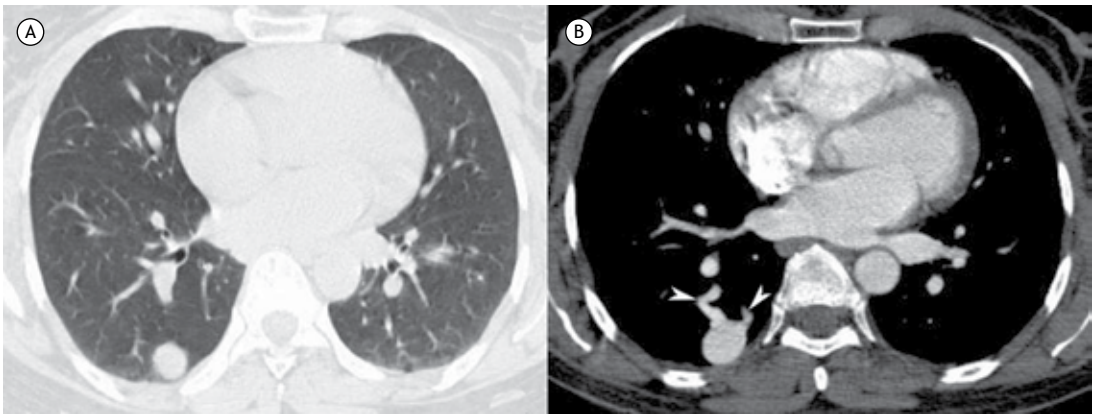

Figure 1. Chest CT displayed in lung (A) and mediastinal (B) windows shows a well-circumscribed nodule in the right lower lobe. In B, contrast enhancement reveals the presence of two vascular outlines (arrowheads) intimately related to the nodule, which correspond to the feeding artery and the draining vein.

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