

The Wall Eclipsing Sign on Pulmonary Artery Computed Tomography Angiography is Pathognomonic for Pulmonary Artery Sarcoma

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Abstract

Background

The objective of this study was to evaluate the imaging characteristics of pulmonary artery sarcoma (PAS) on pulmonary artery computed tomography angiography (PACTA) that can be used to differentiate between PAS and pulmonary thromboembolic diseases, including chronic thromboembolic pulmonary hypertension (CTEPH) and acute pulmonary embolism (APE).

Methods

The clinical data and imaging characteristics of 12 patients with PAS, 156 patients with CTEPH, and 426 patients with APE who were treated at Beijing Anzhen Hospital from January 2007 to August 2013 were retrospectively analyzed. All patients underwent PACTA before treatment, and the diagnoses of PAS and CTEPH were all confirmed by surgical biopsy.

Results

All 12 PAS patients were initially misdiagnosed and received inappropriate thrombolytic and/or anticoagulant therapy before they were referred for surgical intervention. The mean time from PACTA to surgical intervention was 5.5 ± 3.7 months (range 2–11 months). On PACTA, the PAS lesion always eclipsed the wall of the pulmonary artery before infiltrating outside the pulmonary artery, which was termed the wall eclipsing sign. This sign was observed in all PAS patients but was not observed in any CTEPH or APE patients.

Conclusions

PAS is a rare neoplasm with a poor prognosis, and is easily misdiagnosed as thromboembolic disease. The wall eclipsing sign on PACTA is pathognomonic for PAS, and patients with this sign should be investigated to confirm the diagnosis and should undergo surgical intervention as soon as possible, rather than receiving thrombolytic or anticoagulant therapy.

Key words: pulmonary artery, sarcoma, pulmonary embolism