Computed Tomographic Demonstration of an Acquired Aortopulmonary Fistula

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A 72-year-old woman, with sudden onset of faintness, was referred to the emergency department of our hospital. She had been treated medically for a Stanford type B aortic dissection complicated with thoracic aortic aneurysm (TAA) one month previously, and she was scheduled to undergo a total arch replacement because the maximum diameter of the TAA was 6 cm. On admission, she was drowsy and her systolic blood pressure was 54 mmHg with no difference between the right and left arms, and her heart rate was 91 beats/min. Chest auscultation revealed no significant rales but a continuous murmur at the left sternal border. Enhanced computed tomography (CT) showed an elliptical contrast defect with irregularity in the junction of the pulmonary trunk and the left pulmonary artery (PA) (Picture 1B, C, white arrow) in addition to an aortic dissection in the descending aorta (Picture 1A-D). Subsequently constructed multiplanar reformation imaging delineated a ruptured TAA perforating the PA, resulting in an acquired aortopulmonary artery fistula (Picture 2, white arrow). Emergency total arch replacement and PA plasty using an artificial patch was performed. Intraoperatively, the pulmonary arterial wall surrounding the fistula adjacent to TAA severely adhered and lacked its adventitia. On the 44th postoperative day, she was discharged with only slight left hemiparesis.

A ruptured TAA into the PA has been reported to be extremely rare and is mainly diagnosed by echocardiography

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and subsequent imaging examinations such as CT and magnetic resonance imaging (1, 2). In this case, the elliptical contrast defect with irregularity in the junction of the pulmonary trunk and the left PA provided the clue to the early diagnosis and subsequent emergent operation.

References