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IMAGES IN INTERVENTION

Endovascular Repair for Pulmonary Artery and Aortic Dissection Associated With Patent Ductus Arteriosus

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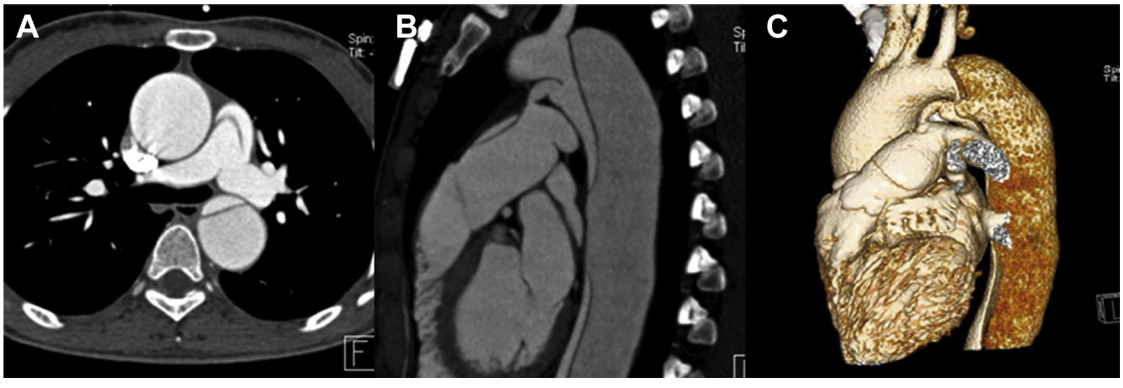
A 26-year-old female patient was admitted to our center with chest pain and dyspnea. She had a 2-year history of hypertension (highest systolic pressure was 180 mm Hg) and retrosternal chest pain for more than 1 year without any previous interventional procedure. Thoracic computed tomography angiography (CTA) revealed a Stanford type B aortic dissection and main pulmonary artery dissection accompanied with patent ductus arteriosus (PDA) (Figure 1). The aortic angiogram confirmed the diagnosis (Figure 2A). Consequently, endovascular aortic stent-graft implantation was performed successfully (Figure 2B). The patient's post-operative course was uneventful without any noteworthy symptoms. A follow-up CTA scan at 16 months showed no migration of the covered stent with partial false lumen thrombosis, closure of PDA, and still the existence of pulmonary artery dissection (Figure 2C).

Aortic dissection with concomitant pulmonary artery dissection is a rare entity associated with high mortality. It is a lethal complication of PDA, and the dissection usually occurs as a result of chronic

FIGURE 1 Thoracic Computed Tomography Angiography



Thoracic computed tomography angiography showing Stanford type B aortic dissection and main pulmonary artery dissection accompanied with patent ductus arteriosus. **(A)** Axial, **(B)** sagittal, and **(C)** volume rendering images.

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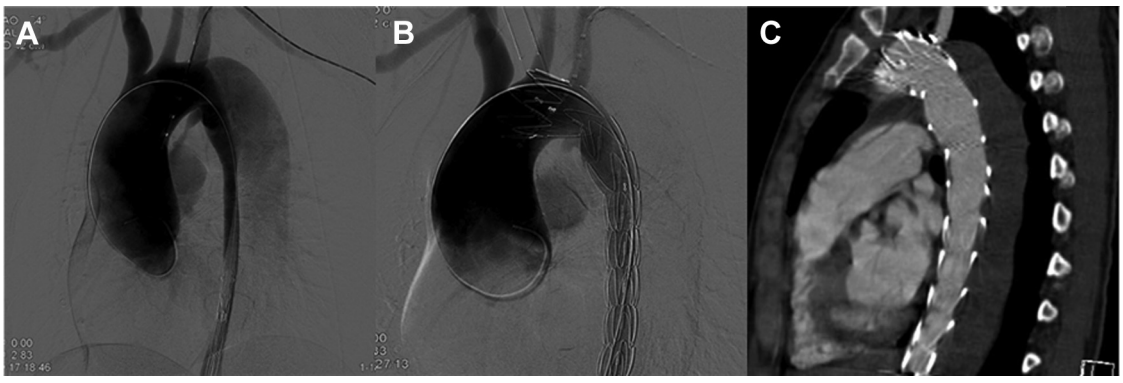
FIGURE 2 Aortic Angiogram and Follow-Up Thoracic Computed Tomography Angiography



Aortic angiogram showing Stanford type B aortic dissection accompanied with patent ductus arteriosus **(A)** and aortic stent-graft implantation **(B)**. **(C)** At 16-month follow-up, computed tomography angiography shows stent deployed into the aorta with partial false lumen thrombosis, closure of patent ductus arteriosus, and still existence of pulmonary artery dissection.

pulmonary hypertension or Eisenmenger's syndrome (1). We speculated that the infiltration could have dissected the layers of the pulmonary artery and aortic wall through the PDA.

The optimal management of this disease has not been defined because of limited cases in the published data. On the basis of anecdotal reports, surgical repair and heart-lung transplantation have been performed in occasional patients (2,3); otherwise, the outcome is fatal. In our patient, the fully closed PDA was revealed by follow-up CTA after the aortic stent-graft implantation. To our knowledge, this is the first case of a patient with pulmonary artery and aortic dissection using an endovascular procedure and remaining well during follow-up. Therefore, in comparison with surgery, endovascular treatment could be an attractive option for pulmonary artery and aortic dissection associated with PDA.

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