We describe the successful surgical treatment of an impending rupture of a saccular descending thoracic aortic aneurysm and accompanying compression of the left main bronchus. A 69-year-old man presented with a history of tingling chest pain lasting for a few hours. His left lung cannot be auscultated, and he was rapid progression of dyspnea. Computed tomography (CT) showed a saccular aneurysm compressing the left main bronchus. The patient was treated with conventional open surgery. The compression was immediately released. No additional surgical intervention was needed and his postoperative course was uneventful. After 6 months of surgery, he remains well.

Keywords: descending thoracic aorta, open surgery, impending rupture, thoracic aortic aneurysm, thoracic aortic endovascular repair

Introduction

Thoracic aortic endovascular repair (TEVAR) is one of the best options for aortic emergencies, especially for lesions in the descending thoracic aorta. On the other hand, open surgery is still the gold standard procedure. We report a successful surgical treatment of saccular-type aneurysm impending rupture in the descending thoracic aorta, which was preferable to be treated with conventional open surgery.

Case Report

A 69-year-old man presented to hospital with a history of tingling chest pain a few hours prior to consult. He had a history of alcoholic liver disease. Computed tomography (CT) showed a saccular aneurysm in the descending thoracic aorta, compressing the left main bronchus (Fig. 1). During the examination, the patient’s left lung could not be auscultated and there was a rapid progression of dyspnea and hypoxia. Chest radiograph revealed loss of aeration in the left lung. He was intubated and underwent emergent descending aortic replacement. He was placed on the right decubitus position and left thoracotomy through the fifth intercostal space was performed. Left heart bypass was established with arterial cannulation of the left common femoral artery and venous cannulation of the left upper pulmonary vein. After the descending thoracic aorta was opened, we found a saccular aneurysm. There was a massive thrombus inside the ulcer. The descending aorta was replaced with a prosthetic graft. He was extubated 2 days after the surgery. The postoperative course was uneventful and he was discharged on the 14th postoperative days. No additional interventions were necessary. Postoperative CT showed a well-repaired descending thoracic aorta and full expansion of the left lung (Fig. 2). He was doing well 1 year after the operation.

Discussion

The developments in endovascular technology have led to increased indications for TEVAR. Some authors have described the successes of emergent TEVAR for descending thoracic aortic pathologies. On the other hand, some articles from well-experienced institutions have proven the efficacy of emergent surgery for descending aortic aneurysms.

Stocia et al. described three cases of successful TEVAR for contained rupture of the descending thoracic aorta, stating that the compression of the esophagus at the time of diagnosis is a contraindication for an endoluminal procedure.

In this patient, the morphology and the emergent nature of the aneurysm may be a good indication for TEVAR. However, TEVAR would not have resolved the...
Successful Treatment with Descending Aorta

Fig. 1  Preoperative CT scan. (A) Axial view, (B) sagittal view, (C) coronal view, and (D) pulmonary window setting. CT: computed tomography

Fig. 2  Postoperative CT scan. (A) Sagittal view and (B) pulmonary window setting. CT: computed tomography
compression of the airway. In that case, the patient may need an additional intervention for the bronchial stenosis. Tracheobronchial stents are one of the best options for bronchial stenosis. But we thought that such devices were inappropriate for this relatively young patient without malignancy.

Some authors have described the efficacy of endovascular technology for penetrating atherosclerotic ulcers. Although this may be true, it seems that open surgery was the preferable procedure for this case, in order to resolve the various problems at the same time. As a result, we are able to accomplish successful treatment of the aneurysm with no additional intervention.

**Disclosure Statement**

Authors have no conflicts of interest.

**Author Contributions**

Study conception: SY, SS, and TF
Data collection: SF and TF

Analysis: TF
Writing: TF
Critical review and revision: all authors
Final approval of the article: all authors
Accountability for all aspects of the work: all authors

**References**

1) Kato N, Hirano T, Ishida M, et al. Acute and contained rupture of the descending thoracic aorta: treatment with endovascular stent grafts. J Vasc Surg 2003; 37: 100-5.
2) Gaudino M, Lau C, Munjal M, et al. Open repair of ruptured descending thoracic and thoracoabdominal aortic aneurysms. J Thorac Cardiovasc Surg 2015; 150: 814-21.
3) Stoica L, Chocron S, Falcoz PE, et al. Endovascular stent grafting for contained rupture of the descending thoracic aorta. Eur J Cardiothorac Surg 2013; 23: 1068-70.
4) Yap KH, Sulaiman S. Pulmonary atelectasis from compression of the left main bronchus by an aortic aneurysm. Singapore Med J 2009; 50: e247-9.
5) Rafanan AL, Mehta AC. Stenting of the tracheobronchial tree. Radiol Clin North Am 2000; 38: 395-408.