One-stage radical operation for aortoesophageal fistula

Objective
Aortoesophageal fistula (AEF) is a life-threatening condition and its prognosis is poor. A few reports have showed good results of staged AEF repair, however, there is no report on a one-stage operation. Herein, we report our experience of performing one-stage radical operation, including aortic replacement, esophagectomy, esophageal reconstruction, omental wrapping, and jejunostomy in two cases.

Case video summary
Case 1: A 71-year-old man underwent thoracic endovascular aneurysm repair (TEVAR) with right axillary to left axillary artery bypass for distal aortic aneurysm 6 years ago. Because the aneurysm had enlarged, two additional TEVAR procedures and open total arch replacement with frozen elephant trunk (FET) were performed. The patient presented with fever and hematemesis and was transferred to our hospital with the diagnosis of AEF. Contrast-enhanced computed tomography revealed an enlarged aneurysm measuring 10 cm in diameter, endoleak, and air in the aneurysm. Endoscopy revealed perforation and a swollen lesion in the mid-esophagus.

Emergent operation was performed. With the patient in the supine position, left oblique supraclavicular incision was given and upper median laparotomy was performed. Cervical esophagus was encircled with tape. Abdominal esophagus was transected, gastric tube was created, and omentum was mobilized. The patient was moved to the right lateral position. Lateral thoracotomy was performed at the 4th intercostal space. After clamping the distal descending aorta, the aorta was opened. We could see the continuous blood flow into the aneurysm. The outermost stent-graft was removed. The endoleak was visualized and one intercostal artery (ICA) was identified as the source of blood flow. Esophagus was separated and pulled out through the supraclavicular incision and the aortic wall around AEF was removed. After irrigation of the intrapleural space, a rifampicin-soaked graft was anastomosed to the FET graft. Distal anastomosis was performed to the distal descending aorta. The gastric tube was pulled up into the intrapleural space, omentum was wrapped around the prosthetic graft and the chest was closed. Finally, the patient was moved to the supine position and anastomosis of the esophagus and gastric tube was performed. Postoperative course was not complicated. After antibiotic therapy, he remains well 9 months after surgery.

Case 2: A 72-year-old woman with fever and hematemesis was diagnosed with AEF for which she underwent TEVAR 2 months ago. The fever had not resolved after surgery; therefore, she was transferred to our hospital. Computed tomography revealed air around the stent-graft. Endoscopy revealed esophageal perforation through which the stent-graft was visible. Emergency operation was performed similar to that performed in case 1. The previous stent-graft was completely removed. After surgery, anastomotic leakage at the esophagus and gastric tube anastomosis site was found. However, the leakage was managed conservatively, the patient was discharged home, and she remains well 4 months after surgery.

Conclusions
Although these patients should be followed up in long-term periods, one-stage radical operation may provide a better outcome.

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