Diagnostic and Interventional Endoscopy

Case Report

A Rare Cause of Upper Gastrointestinal Bleeding: Aorta-Esophageal Fistula

Şehmus Ölmez[1], Ferid Cereb[2], Ayşe Yıldırım Çelikdemir[3], Halil Çapar[1], Duran Deha Çetin[1], Bünyamin Sarıtaş[1]

[1]Department of Gastroenterology, Adana City Training and Research Hospital, Health Sciences University, Adana, Türkiye
[2]Department of Cardiovascular Surgery, Adana City Training and Research Hospital, Health Sciences University, Adana, Türkiye
[3]Department of Radiology, Adana City Training and Research Hospital, Health Sciences University, Adana, Türkiye

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Corresponding author: Şehmus Ölmez, e-mail: drsehmusolmez@gmail.com

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Abstract

Aortoesophageal fistula (AEF) is rarely seen in gastroenterology practice. It is a very fatal condition. Common causes of AEF are aortic aneurysms and dissections, foreign body ingestion, traumatic aortic injuries, ruptured penetrating aortic ulcers, esophageal or bronchogenic malignancies, and thoracic surgery such as thoracic endovascular aortic repair (TEVAR). Post-TEVAR AEF is a very rare cause of massive upper gastrointestinal bleeding (UGIB). Management of AEF is difficult and causes serious outcomes. Here we report a case presented with UGIB related to post-TEVAR AEF.

Keywords: Aortoesophageal fistula, TEVAR, upper gastrointestinal bleeding

INTRODUCTION

Aortoesophageal fistula (AEF) is rarely observed in gastrointestinal endoscopy practice. It is a very fatal condition.[1] Common causes of AEF are aortic aneurysms and dissections, foreign body ingestion, traumatic aortic injuries, ruptured penetrating aortic ulcers, esophageal or bronchogenic malignancies, and thoracic surgery such as thoracic endovascular aortic repair (TEVAR).[1,2] Post-TEVAR AEF is a very rare cause of massive upper gastrointestinal bleeding (UGIB). Management of AEF, which has developed as a result of previous vascular surgery, is difficult and causes serious outcomes.[1] Early diagnosis reduces mortality.[1] Here we report a case presented with UGIB related to post-TEVAR AEF.

CASE PRESENTATION

A 66-year-old male patient was admitted to the emergency department of an external center with complaints of bloody vomiting and difficulty swallowing a day before. After he had a cardiac arrest and successful resuscitation, he was referred to our hospital. He had a history of thoracic aorta surgery due to an aortic aneurysm 2 years earlier. He had an upper gastrointestinal endoscopy 30 days before, and the endoscopy revealed gastritis with no esophageal findings. On physical examination, his general status was poor, and he was intubated. His blood pressure was 130/80 mmHg, and his pulse was 88/min. Bowel sounds were 8/min, and he had melena on rectal examination. Laboratory evaluation showed the following results: hemoglobin 9.0 g/dL, white blood cell count 8300/mm^3, thrombocyte count 151.000/mm^3, prothrombin time 14.9 seconds, glucose 122 mg/dL, urea 122 mg/dL (0-50 mg), creatinine 1.85 mg/dL, and CRP: 227.1 mg/L. The other biochemical values were normal. Emergency endoscopy at the bedside in the emergency department with low air insufflation revealed an external pressure sign between 25 and 37 cm from the incisors and a lesion with clots and oozing from one side at 36 cm from the incisors (Figure 1A and B). There was fresh blood and clots in the stomach. Since he had a previous aorta operation, the patient was considered to have an aorta-esophageal fistula. Computed tomography and angiography with contrast revealed a fusiform aneurysmatic dilatation of the descending aorta with the widest diameter of 11 cm and an image of an aortic stent starting after the subclavian artery orifice reaching the T10-T11 vertebra body, which is related to TEVAR (Figure 2A). Inside the aneurysmatic dilatation, there was an area considered a mural thrombus and a thrombotic aneurysmatic area, which showed air densities inside surrounding the graft stent reaching approximately 4.5 cm at the maximum at the level of the arcus aorta-descending aorta junction (Figure 2B). At the lower part of the graft stent, 7 cm above the diaphragmatic hiatus, there was aneurysmatic dilatation and circular mural thrombi. The patient was consulted with interventional radiology, but the interventional radiology department planned no intervention. The patient had received 2 packs of erythrocyte suspension. He was followed in the intensive care unit of the cardiovascular surgery department and given ceftriaxone and inotropic treatment (dopamine hydrochloride and adrenaline). During follow-up, his general status was poor, and he did not respond to inotropic treatment. He died on the fourth day of hospitalization.

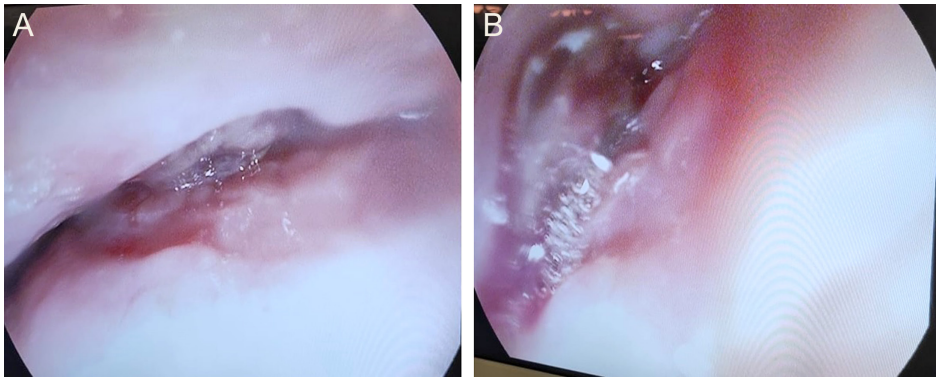

Figure 1. Endoscopic appearance of aortoesophageal fistula with clot (A) and oozing (B).

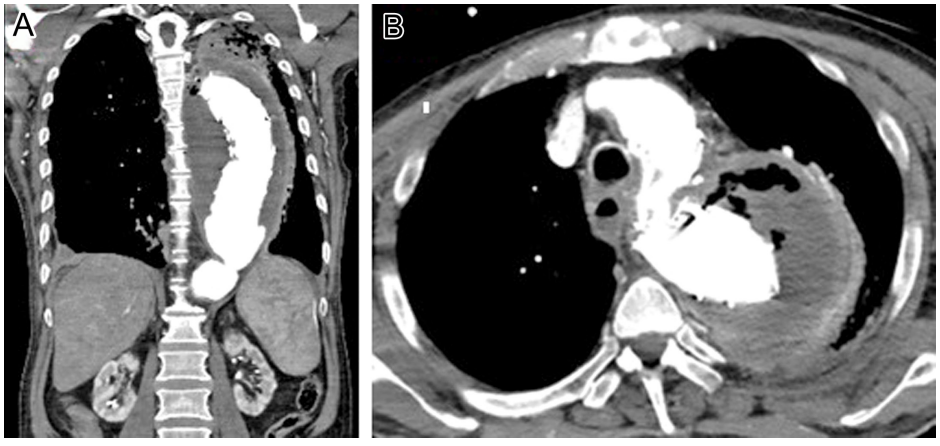

Figure 2. Computed tomography image of an aortic stent starting after the subclavian artery orifice reaching the T10-T11 vertebra body which is related to thoracic endovascular aortic repair (A), and mural thrombus and a thrombotic aneurysmatic area, which showed air densities inside (B).

Aorta-esophageal fistula is a very rare cause of UGIB. A diagnosis of AEF is rarely made before massive hematemesis. The classic clinical triad consists of midthoracic pain or dysphagia, a sentinel episode of hematemesis, followed by fatal exsanguination (Chiari's triad).[1] However, hemorrhagic shock is a common presentation in patients with fatal AEF. The death of a patient with AEF is inevitable without surgical treatment. TEVAR, which is a less invasive method, is more frequently used for the treatment of aortic aneurysm and aortic dissection. The mechanism of AEF after endovascular repair involves progressive erosion through the aortic and esophageal walls by the rigid extremities located at either end of the stent.[1]

There are surgical, endoscopic, and interventional radiological treatment options; however, the definitive treatment is surgical intervention.[3] Although different surgical approaches exist, the best long-term survival was achieved in patients who had undergone esophagostomy alongside the replacement of the infected aortic graft. However, the long-term prognosis of surgical treatment was poor.[4]

There are a few cases of post-TEVAR AEF treated with covered esophageal stents.[5,6] Since there might be infected fluid and ischemic tissue elements between the graft and esophageal gap, placing esophageal stents could not prevent infection and sepsis. The short-term prognosis is very poor.

Post-TEVAR AEF has been frequently observed as a fatal complication. Therefore, AEF should be considered at the beginning as a cause of upper gastrointestinal bleeding in a patient with a history of thoracic aorta vascular surgery. The most common causes of death are bleeding and infection.[7,8] Also, the presence of a high CRP suggests the presence of infection. Since our case had high CRP levels, we think a thoracic aorta infection also exists.

Our patient is intubated due to respiratory arrest, and his general condition was not stable. An endoscopy was performed at the bedside, and massive bleeding due to AEF was observed. Since endoscopy was performed at the bedside, we were unable to insert an esophageal stent. The cardiovascular surgery department planned a surgical intervention. However, the patient was unstable, and surgical treatment could not be applied.

Informed consent was obtained from the patient's representatives who participated in this study.

In conclusion, AEF is a rare cause of UGIP. Early diagnosis is very important; mortality is very high.

Informed Consent: Informed consent was obtained from the patient's representatives who participated in this study.

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