



Staged Repair of Primary Aortoesophageal Fistula

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BACKGROUND

- Primary aortoenteric fistulas are rare with an incidence reported up to 0.07% at autopsy.
- Literature review yields few reported cases, and rarer still is a fistula between a normal thoracic aorta and the esophagus. Rather, 83% of cases are associated with an aneurysmal aorta and 54% involve the duodenum.
- Patients with aortoesophageal fistula (AEF) usually presents with a triad of chest pain, dysphasia, and a herald bleed. Without treatment, AEFs will result in exsanguination and are universally fatal; even with traditional open surgical treatment, mortality is reported over 55%.
- The complex pathology of AEFs make repair more challenging, given an infected field, friable tissue, and patients who are often hemodynamically unstable.
- Staged repair using endografts as initial treatment with primary goal of controlling bleeding and preventing fatal exsanguination has been reported. We present a case where a descending thoracic aorta to esophageal fistula was repaired, and this strategy was utilized.

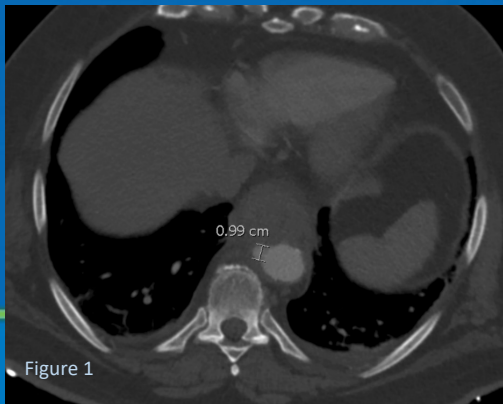


Figure 1



Figure 2

METHODS

- 74-year-old male presented to the ER after a fall complaining of chest pain and dysphagia.
- Diagnosis: penetrating descending thoracic aortic ulcer with a soft tissue density between aorta and esophagus. (Fig. 1)
- Initial treatment: urgent placement of TEVAR stent graft. (Fig. 2)
- EGD: ulcer in the distal esophagus.
- EUS: no esophageal mass.
- Post-operative course was complicated by acute cholecystitis and a pulmonary embolism for which he underwent laparoscopic cholecystectomy and was placed on anticoagulation.
- Three months later, patient presented with a herald bleed in the form of hematemesis.
- Diagnosis: degeneration of the distal thoracic aorta. (Fig. 3 and 4)
- First stage: urgent extension of TEVAR with distal extension.
- Post op: broad spectrum antibiotics and antifungals, and a multidisciplinary team was assembled for second stage repair ten days after first.
- Second stage surgical technique:
 - Thoracoabdominal incision
 - Proximal control of aorta at T4 and distal control proximal to the celiac artery
 - Left heart bypass with perfusion to abdominal aorta.
 - Aortotomy with explant of the stent grafts
 - AEF identified with bilious output (Fig. 5)
 - Debridement of infected tissue
 - Aortic reconstruction with rifampin soaked 24mm Dacron graft (Fig. 6)
 - Primary repair of esophagus from within aortic sac and with an omental pedicle flap buttress
 - Placement of gastrojejunostomy tube for enteral access.
- Patient was discharged to rehab 22 days post-operatively.



Figure 3

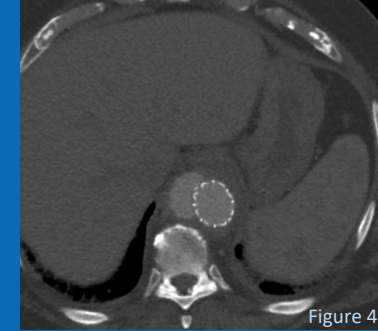


Figure 4

CONCLUSIONS

Our case, during which the patient underwent TEVAR followed by open thoracoabdominal aortic repair and primary esophageal repair, adds to the growing but limited body of literature of staged repairs of aortoesophageal fistulas. This approach allows for rapid control of bleeding and sepsis, utilizing a minimally invasive procedure. The patient can then be optimized for a more definitive repair. Using this technique increases the chance of successful management of a highly morbid disease and should be considered as a tenet of aortoesophageal fistula management.

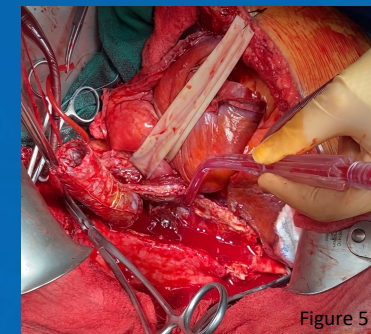


Figure 5

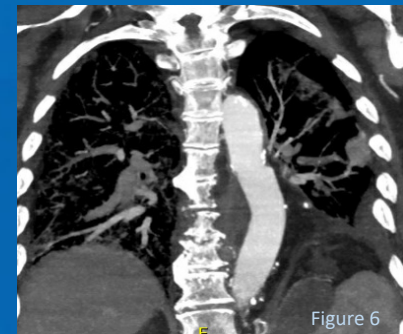


Figure 6

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