Successful Management of Anastomotic Leakage and Lung Fistula After Esophagectomy

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We report the successful management of a case of anastomotic leakage with a lung fistula as a complication of esophagectomy by use of a double elementary diet tube. (Ann Thorac Surg 2014;97:1071–3) © 2014 by The Society of Thoracic Surgeons

A nonneoplastic fistula between the gastric conduit and the lung as a complication of esophagectomy is a very rare but life-threatening condition. We report a patient in whom management with a double elementary diet tube (W-ED tube) for a lung fistula as a complication of esophagectomy was successful.

A 62-year-old man with epigastric discomfort was referred to our hospital. Upper gastrointestinal endoscopic examination showed an esophageal type 3 tumor in the middle portion of the thoracic esophagus, and biopsy specimens revealed squamous cell carcinoma. He received a diagnosis of esophageal cancer T3N1M0 (International Union Against Cancer stage III). He received neoadjuvant chemotherapy comprising 5-fluorouracil and cisplatin, and underwent video-assisted thorascoscopic esophagectomy, anastomosis of the cervical esophagus with a gastric conduit, and enteral nutrition, we used a W-ED tube (Nippon Sherwood, Tokyo, Japan). The W-ED tube was composed of a separated double lumen, which facilitated a reduction in the pressure of the digestive cavity 45 cm from the end of the tube and the delivery of enteral nutrition administered nasally (Fig 3A). He recovered rapidly, the lung fistula closed on postoperative day 21 (Fig 4), and oral intake was reinitiated on postoperative day 31. Computed tomography of the chest on postoperative day 24 showed improvement of the lung abscess and pneumonia (Figs 1C, 1D). He was discharged on postoperative day 42 in a favorable condition.

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Comment
A benign fistula between the lung and the gastric conduit after esophagectomy is very rare and is potentially life-threatening. We are aware of only one previous case in the English literature, reported by Osaki and colleagues [2]. Our case involved the left lung as a result of anastomotic leakage and empyema thoracis, and it was treated by conservative therapy. By contrast, the case reported by Osaki and colleagues involved the right lung as a result of the penetration of a peptic ulcer in the gastric conduit 4 years after esophagectomy, and it was repaired surgically with direct closure after conservative management for 4 weeks.

Decisions about the therapeutic strategies for benign fistula between the airway and the anastomotic leak portion should depend on the severity of symptoms, the size and location of the fistula, and diverse accompanying conditions. Although lung fistula is extremely rare, tracheal or bronchial fistulas with successful management of conservation [3], stenting treatment [4], and surgery [5–8] have been reported. This is the first report of successful conservative management of anastomotic leakage and lung fistula after esophagectomy with W-ED tube. To treat this patient with anastomotic leakage and a lung fistula connecting the digestive and pulmonary cavities, we used this tube composed of a separated double lumen, which enabled us to reduce the pressure of the digestive

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Fig 2. Radiologic contrast agent view demonstrating anastomotic leakage and lung fistula. The contrast agent was injected by nasogastric tube and flowed into the left bronchus through the lung fistula.

Fig 3. (A) Double elementary diet tube (W-ED tube) composed of separated double lumen. (B) Use of tube to reduce pressure of digestive cavity and deliver enteral nutrient from the distal point nasally.

Fig 4. Closure of lung fistula closed on postoperative day 21.
cavity and deliver enteral nutrient from a distal point nasally (Fig 3B). The treatment was effective, and the patient recovered smoothly.

In conclusion, we encountered a very rare case of anastomotic leakage followed by lung fistula after esophagectomy, managed successfully with a W-ED tube. We consider that the W-ED tube was very effective for the treatment of this patient because it facilitated decompression of the gastric conduit and administration of sufficient parenteral nutrition.

References

Extracorporeal Membrane Oxygenation Support After Ivor-Lewis Esophagectomy for Esophageal Adenocarcinoma

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Respiratory failure after Ivor-Lewis esophagectomy results in poor outcomes. Limited treatment strategies are available to manage this severe complication. One possibility is extracorporeal support. We report the successful use of extracorporeal support as a successful strategy for refractory respiratory failure.

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Eosophageal carcinoma is one of the deadliest cancers worldwide. At the time of diagnosis, more than half of patients have either unresectable tumors or radiographically visible metastases [1]. Neoadjuvant chemotherapy and radiation therapy have become more prevalent given their survival benefit, as shown in recent randomized clinical trials [2–4]. Unfortunately, this has been accompanied by an increased incidence of respiratory complications, including refractory respiratory failure [4, 5]. The need for supporting refractory respiratory failure leading to the possible use of extracorporeal membrane oxygenation (ECMO), has emerged as a new treatment for refractory respiratory failure, yet its exact role is still evolving. The ECMO was originally reserved for patients at substantial risk of death [6]. However, the use of ECMO has recently broadened to include rescue therapy for respiratory failure [6].

Here we describe a patient who was successfully treated with ECMO for severe respiratory failure post-Ivor Lewis esophagectomy. We report the clinical features of this case to discuss the possible future role of ECMO after complex foregut surgery.

A 48-year-old man with a 40-lb weight loss, greater than 50 pack-year smoking history, and emphysema presented with worsening dysphagia (Fig 1). After endoscopic biopsy he was diagnosed with poorly differentiated adenocarcinoma. The tumor measured 10 × 4.0 × 3.5 cm, with local invasion of the pericardium, aortic wall, and mediastinal pleura. Based on imaging it was staged T4N1Mx (Fig 1). Neoadjuvant Taxotere (Sanofi-Aventis, Bridgewater, NJ) and 5040 cGy of radiation therapy were given, and a percutaneous endoscopic

Fig 1. Computed tomographic scan demonstrating obstructive lower esophageal mass.