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Case Report

Minimally invasive oesophagectomy for corrosive stricture oesophagus

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ABSTRACT

Corrosive oesophageal stricture is commonly encountered in developing countries. Historically resection of strictured oesophagus was feared due to adhesions but with minimally invasive surgery it is possible to resect esophagus.. A 19 year female patient with history of bed bug poisoning presented with complete dysphagia. On endoscopy there was upper thoracic esophageal stricture. Endoscopic dilatation of esophagus was tried at first but failed. Since her cervical oesophagus was not diseased and considering her young age for the risk of malignancy in long term, thoracoscopic oesophagectomy was done. There were no perioperative complications. Patient doing well on follow up.

Keywords: Corrosive stricture, Oesophagectomy, VATS, Conduit, Case report

INTRODUCTION

Corrosive injury of the oesophagus is a commonly encountered problem especially in developing nations where there is easy availability of cheap acids and alkali.[1,2] Patients who had gone through the acute state will invariably end up in strictures involving upper gastrointestinal tract.[3] Endoscopic dilatation is the preferred initial treatment if the stricture is dilatable. Failed endoscopic dilatation needs surgery. But still there is a debate whether to resect the native strictured oesophagus or not.[4] Both thoracotomy and Trans hiatal esophagectomy has been tried for removal of esophagus in this scenario with variable results. Thoracotomy is associated with increased morbidity. Trans Hiatal Oesophagectomy is a blind procedure and can potentially injure surrounding mediastinal structures. With VATS oesophagectomy it is possible to remove the esophagus under direct vision. In a high volume center, doing regular video assisted thoracoscopic oesophagectomy for cancer oesophagus, it is possible to resect the oesophagus in corrosive oesophageal stricture safely.

CASE REPORT

A 19 year female patient presented to us with history of suicidal attempt of bed bug poisoning. Initially she was managed at nearby centre where endoscopy was done after 3 weeks, which showed a stricture at 24 cm (Figure 1). She was able to take liquids and sometimes semisolids orally at that time. Later her dysphagia progressed and endoscopic dilatation was attempted at nearby centre but failed and referred to our hospital for further management. She presented to us two months after corrosive ingestion with complete dysphagia. Her barium swallow study showed stricture at the upper thoracic oesophagus. Endoscopy was repeated at our center which showed a pinpoint stricture at 24 cm from incisor. Dilatation using Savary Gilliard (SG) dilator was done, but dilatation was not passable. Feeding jejunostomy was inserted for nutrition and planned for re-evaluation once her nutritional status improves.

After three months she presented with complete dysphagia and on feeding jejunostomy dependence for nutrition. Barium study showed a stricture at upper

thoracic esophagus with distal streak of flow of contrast (Figure 2). Endoscopy showed a stricture at 24 cm endoscopic dilatation was attempted but failed. Post procedure she developed chest pain, CT thorax and abdomen was done with contrast which showed minimal peri-esophageal air pockets (Figure 3). After stabilization definitive oesophageal replacement procedure was planned.

Considering her younger age for the risk of malignancy and mucocele, oesophagectomy was planned. We planned oesophagectomy by VATS in prone position for this patient. Intra operatively there were dense adhesions surrounding the oesophagus (Figure 4). Careful oesophageal mobilization was aimed. The plane of resection was kept close to the oesophagus. Once the oesophagus was mobilized inside thorax, patient was positioned supine, abdomen opened by midline incision. Stomach availability for conduit confirmed, gastric conduit was prepared after resecting and removing oesophagus through abdomen (Figure 5). Gastric conduit was brought up through posterior mediastinal route and anastomosed with oesophagus in neck. Pyloroplasty was added for better gastric emptying. Resected specimen showed long segment oesophageal stricture at the thoracic oesophagus (Figure 6). Postoperative period was uneventful. Oral semisolids were started on postoperative day 8 and she was discharged on POD 11. Histopathological examination of resected oesophagus showed complete ulceration of mucosa with severe congestion, submucosa shows edema and hypertrophy of muscularis layer.

She is on regular follow up. One month after surgery she is able to take solid foods without any difficulty and started to gain weight. She got minimal bile reflux which was managed by prokinetics. Follow up endoscopy showed free passage of scope through the conduit.

Figure 1: Endoscopy showing stricture (arrow) at 24 cm.

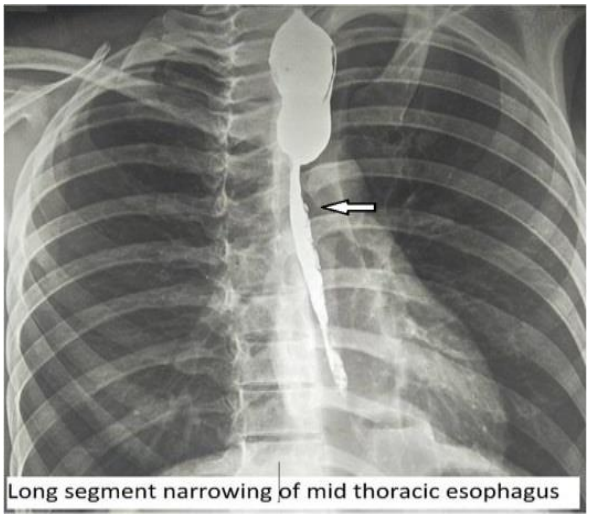

Figure 2: Barium study showing stricture (arrow) at upper thoracic oesophagus with distal streak of flow of contrast.

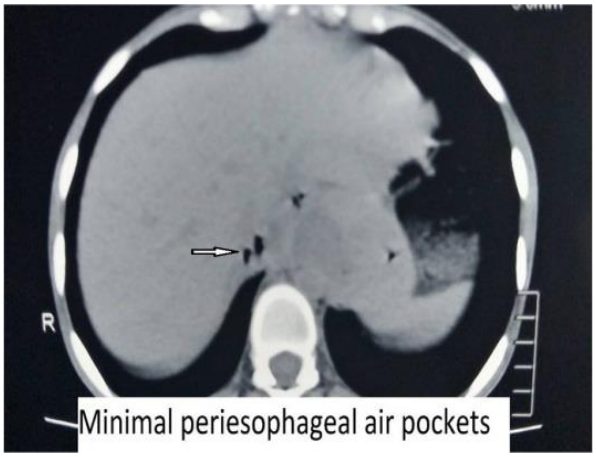

Figure 3: CT thorax and abdomen with contrast showing minimal peri-oesophageal air pockets (arrow).

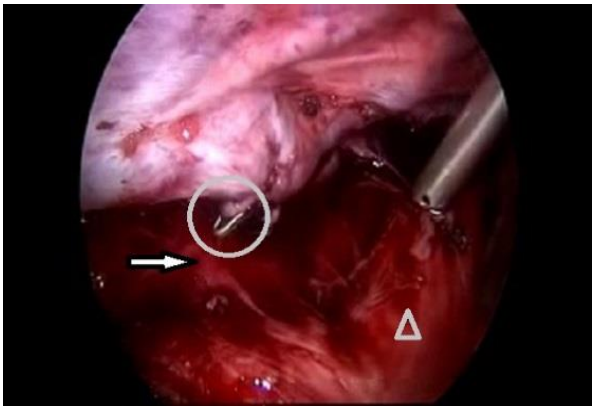

Figure 4: Intraoperative picture showing dense adhesions (arrow) surrounding the oesophagus (triangle mark) and circle shows clipped azygos vein.

Figure 5: Stomach conduit being prepared intraoperatively and adequate reachability to neck checked.

Figure 6: Resected specimen showing the stricture (arrow).

DISCUSSION

Corrosive stricture of upper GI tract is difficult to treat and manage. Management differs from endotherapy to surgical management. Surgery is usually done in those patients who fail endoscopic dilatation.[5] In case of stomach stricture, resection is most commonly offered than bypass procedure because it avoids long term occurrence of malignancy and also stomach can be resected easier than oesophagus.[6] But in case of oesophagus controversy still exists whether to resect oesophagus or not.[4] Proponents who claim that resection of oesophagus should be avoided states that although corrosive oesophagus is a premalignant condition it takes around 35 to 40 years for cancer to develop. Also mediastinum is not entered and so perioperative morbidity is reduced.[7] On the contrary people who claim that oesophageal resection should be offered states that long term complications such as malignancy, mucocele are avoided especially in younger patients.[8] They also proposed that if orthotropic posterior mediastinal route is used which is considered to be the shortest possible route from abdomen to neck, anastomotic complications can be reduced. Subsequent endoscopic procedures if any needed after surgery will be easier if conduit is placed in posterior mediastinum than other routes.[9]

With the advancement of minimally invasive techniques it is possible to resect the esophagus under vision safely.[10,11] Since oncological resection is not needed in case of corrosive stricture oesophagus, plane of resection can be kept closer to oesophagus during video assisted thoracoscopic surgeries, thus preventing potential complications.

CONCLUSION

Minimally invasive Oesophagectomy can be considered for corrosive oesophageal stricture to prevent long term complications.

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Ethical approval: Not required

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