

Minimally invasive esophagectomy—left neck anastomosis

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ABSTRACT

Minimally invasive esophagectomy (MIE) is supplementary to open surgery in the thoracic surgery. A 65-year-old male was identified with middle thoracic esophageal squamous cell carcinoma by gastroscopy. In preoperative examinations, neither obvious abnormality nor distant metastasis was noted, and he could tolerate the esophagectomy according to his heart and lung function tests. Chest computed tomography (CT) and endoscopic ultrasonography showed no visible swollen lymph node in the mediastinum. The cTNM classification was T2N0M0. Therefore, MIE was performed. The patient recovered well after the surgery.

KEYWORDS

Minimally invasive esophagectomy (MIE); esophagectomy; thoracoscope; laparoscope

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Introduction

Compared with traditional surgery, minimally invasive surgery (MIS) can reduce inflammation immune inhibition, and accelerate postoperative recovery (1,2). Recently, minimally invasive esophagectomy (MIE) have been recognized beneficial for esophagus cancer. MIE is becoming more and more popular and acceptable to patients despite of the continuing controversies on its safety, as well as difficulties in anastomosis and lymph node dissection,

Operative techniques (Video 1)

Esophageal and mediastinal lymphadenectomy was performed with four ports under thoracoscopy on the left lateral position. Thoracic duct was dissected and ligated with Hemlock preventively to prevent postoperative chylothorax. Two 20-French chest tubes were inserted for postoperative drainage.

The patients were then repositioned on supine position, the stomach was isolated without pyloroplasty, and then lymph nodes dissection was performed around the stomach through four ports and a small upper abdominal midline incision (about 4 cm).

A 3 cm incision was made on the anterior border of sternocleidomastoid over left neck. Then the cervical esophagus was separated, exposed, and divided. The distal esophageal stump was sutured with long silk suture. The esophageal and gastric specimen was then pulled out of the tiny upper midline incision.

Gastric tube (3-4 cm in diameter) was then constructed from the distal lesser curve to preserve the right gastric vessels using five to six firings of the linear cutting stapler (Ethicon Endosurgery, Cincinnati, OH, USA), and the gastric seromuscular layer was intermittently sutured to embed the gastric stump.

Plastic wrap on the gastric tube was attached to the sutures, replaced in the abdomen and pulled out from the neck incision. Gastrostomy was performed at the end of the gastric conduit. A 21- or 25-mm circular EEA stapler was placed into the gastric

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Video 1. Minimally invasive esophagectomy—left neck anastomosis.

remnant for construction of the esophagogastric anastomosis. The gastrotomy was closed with a linear stapler (Ethicon Endo-surgery, Cincinnati, OH, USA).

Comments

This surgical video provides a proper surgery including mediastinal lymphadenectomy with a clear operative field. It is advised to dissect the left and right recurrent laryngeal nerves before the mediastinal lymphadenectomy, and please do not dissect the recurrent laryngeal nerve if no remarkably swollen lymph nodes were noted. Preventive surgical ligation of thoracic duct during esophageal carcinoma resection can reduce the incidence of postoperative chylothorax. In this video, we ligated the thoracic duct with hemlock. When blindly pulling out the gastric tube

from the abdominal cavity to the neck, sometimes the gastric tube and gastroepiploic artery could be injured, so a plastic wrap was used on the gastric tube to avoid possible injuries.

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