Robotic gastric mobilization during Ivor Lewis esophagectomy (with video)

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TEXT

Surgical procedures for esophageal cancer (lewis-santy procedure) remain associated with high postoperative complication rates. However, a reduction of postoperative complications has been observed recently since this type of intervention has been centralized. Another cause explaining postoperative reduced complication rates is the possibility to perform a laparoscopic approach for gastric dissection [**1**]. It has been shown that it reduces the rate of major complications and in particular pulmonary complications, without impacting the overall survival [**2**]. Consequently, the laparoscopic approach is currently considered as the gold standard. The use of the robotic platform has been proposed to perform gastric dissection with more and more centers providing this approach for esophageal cancer surgery [**3**]. This video shows a 60-year-old patient, with no medical history, managed for a non-metastatic squamous cell carcinoma located in the middle of thoracic esophagus. After neoadjuvant radiochemotherapy, the morphological assessment showed a stable situation without local or distant tumoral extension. It was decided to perform an esophagectomy using Ivor Lewis procedure. This video shows the different operating steps necessary to perform a robotic-assisted abdominal mobilization of the stomach, associated with lymph node dissection.

The first step was the gastric dissection of the greater gastric curvature going from right to the left after identification and preservation of the right gastro-epiploic artery. Then, adhesions between the posterior surface of the stomach and the anterior surface of the pancreas were sectionned. Pars flacida opening was then performed allowing to continue the dissection along the right border of the stomach until the right diaphragmatic crus. The left gastric pedicle was then exposed, dissected, and ligated at its origin (**Figure 1**). The hiatus orifice was dissected from both sides of the esophagus. The last posterior adhesions near the left diaphragmatic pillar were dissected allowing to completely release the stomach. The vascular arcade of the lesser curvature was then sectioned, allowing to start stapling the gastric tube using an

horizontal stapling of 30 mm. Then, two more applications of the stapler were needed vertically without completely disconnecting the stomach (**Figure 2**). The gastric tube was oversewed using an absorbable 3.0 running suture. The abdominal procedure was ended with a 2-3cm pyloroplasty. Operative time for this abdominal phase was 160 minutes with negligible blood loss and no abdominal drainage. Then, the thoracic phase was performed by a right posterolateral thoracotomy and a mechanical oesogastric anastomosis. The patient was able to resume oral nutrition on the 5th post-operative day after an opacified abdominal CT scan showing no signs of fistula (**Figure 3**). He was discharge on the 12th post-operative day. This video shows different steps necessary to perform a robotic-assisted gastroplasty during an Ivor Lewis procedure. It will be usefull for all surgeons having to perform this type of surgical procedure.

Conflict of interest: none

FIGURE LEGEND

Figure 1: Ligation and section of the left gastric vein.

Figure 2: Fashioning the gastric tube.

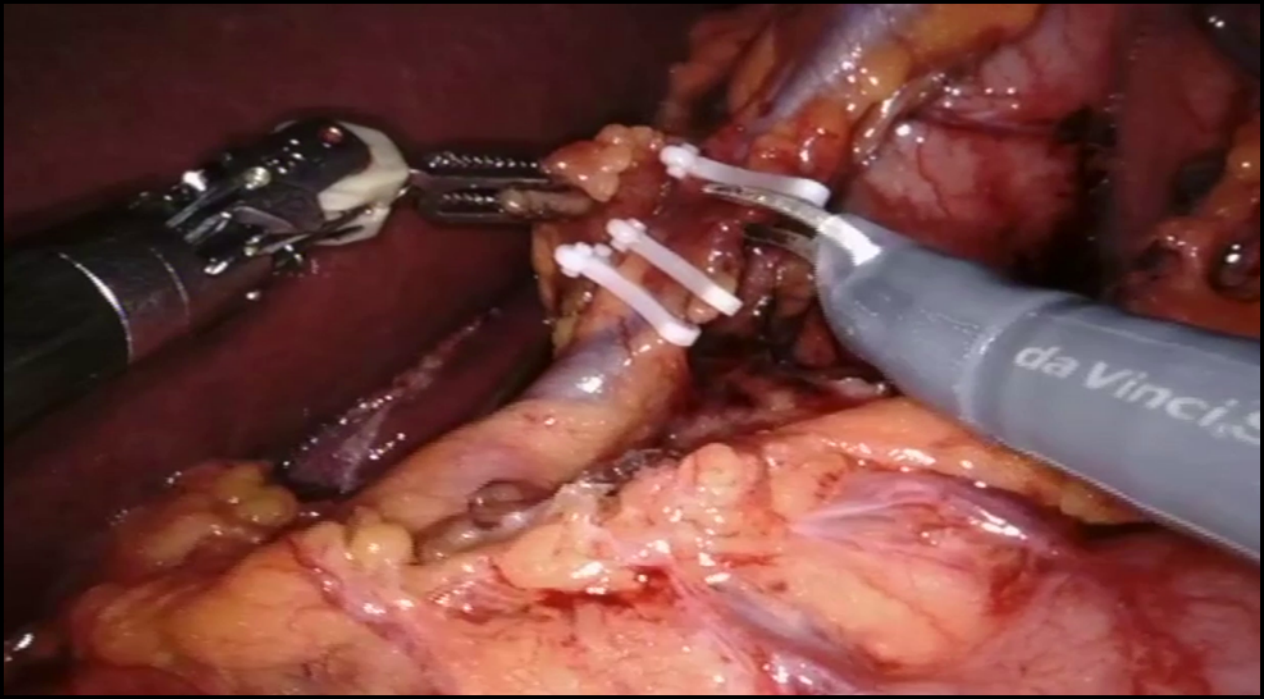
Figure 3: Thoracic computed tomography scan showing absence of post-operative leak.

REFERENCES

[**1**] Gronnier C, Piessen G, Mariette C. Laparoscopic gastric mobilization and lymphadenectomy during Ivor Lewis esophagectomy. J Visc Surg. 2016; 153:203-8.

[**2**] Mariette C, Markar SR, Dabakuyo-Yonli TS, Meunier B, Pezet D, Collet D, D'Journo XB, Brigand C, Perniceni T, Carrère N, Mabrut JY, Msika S, Peschaud F, Prudhomme M, Bonnetain F, Piessen G; Fédération de Recherche en Chirurgie (FRENCH) and French Eso-Gastric Tumors (FREGAT) Working Group. Hybrid Minimally Invasive Esophagectomy for Esophageal Cancer. N Engl J Med. 2019; 380:152-162.

[**3**] Egberts JH, Biebl M, Perez DR, Mees ST, Grimminger PP, Müller-Stich BP, Stein H, Fuchs H, Bruns CJ, Hackert T, Lang H, Pratschke J, Izbicki J, Weitz J, Becker T. Robot-Assisted Oesophagectomy: Recommendations Towards a Standardised Ivor Lewis Procedure. J Gastrointest Surg. 2019; 23:1485-1492.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