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VIDEO FORUM

Cranial-first approach for laparoscopic surgery with splenic flexure mobilization

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Introduction

Surgical strategy for left-sided colorectal cancer depends on several anatomical features: location of the tumor, variation of the vessels, and length of the colon [1]. Laparoscopic splenic flexure mobilization is one of the most difficult procedures for complete mesocolic excision and tension-free anastomosis, which requires not only meticulous surgical skills but also deep anatomical knowledge, and has so far remained technically demanding [2].

Our strategy "cranial-first approach", focuses on safe mobilization without pancreatic injury in laparoscopic surgery with splenic flexure mobilization. In particular, the complicated anatomy at the origin of transverse mesocolon, including arterial variations near the pancreas [3], makes surgeons lose their way, sometimes resulting in pancreatic injury and bleeding. Additionally, for obese patients in whom the thick mesocolon makes it difficult to detect the pancreas in the medial approach, this approach could be a promising method for avoiding pancreatic injury.

Patient

A 78-year-old female with a body-mass index of 16.9 kg/m^2 was diagnosed as having cancer of the descending colon, cT4aN0M0 Stage IIB. Colonoscopy showed a circumferential type II tumor located at the sigmoid-descending colon junction. Biopsy revealed moderately differentiated adenocarcinoma. Computed tomography scan showed obstructive colitis from the cecum to the descending colon. For a safe anastomosis, we planned laparoscopic descending colectomy, preserving the main trunk of inferior mesenteric artery, and a functional end-to-end anastomosis.

Surgical technique

Our strategy consists of three steps as described below and is shown in the attached video.

1st step, Cranial approach

The omental bursa was opened and adhesions between the posterior wall of the stomach and the transverse mesocolon were dissected as much as possible to visualize the pancreas clearly. The superior layer of transverse mesocolon was dissected along the inferior border of the pancreas and gauze was placed cranially as a landmark of the root of the transverse mesocolon.

2nd step, Medial approach

The mesocolon was mobilized medially from retroperitoneal structures and cut and divided at the root of the feeding artery. The inferior mesenteric vein should be preserved as long as possible in the medial approach as a landmark to guide the separation between the mesocolon and Gerota's fascia. The inferior layer of the mesocolon was opened along the inferior border of the pancreas over the gauze placed in the cranial approach.

3rd step, Lateral approach

The lateral attachment was dissected along the descending colon and the mobilization was completed.

Results

Operative time was 193 min and blood loss was 5 ml in total. The patient was discharged 9 days after surgery without any complications. Pathological diagnosis was pT3N0M0,

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pStage IIA by Union for International Cancer Control (UICC) staging and all margins were negative for cancer.

Conclusions

The cranial-first approach could be a promising technique for safe splenic flexure mobilization and may be a useful adjunct to the classic inferior approach [4] in patients in whom the pancreas cannot be clearly identified.

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethical approval This research was performed in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent Informed consent was obtained from all individual participants included in the study.

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