

Laparoscopy-assisted complete mesocolic excision for right-hemi colon cancer

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Abstract: There aren't any standardized ways of controlling operating, although laparoscopic-assisted right-hemi colon cancer complete mesocolic excision (LR-CME), has been widely applied used in China and abroad. Hohenberger gave a new concept that treating complete mesocolic excision (CME) as a colon cancer standard operation for the first time in 2009. And the LR-CME that based on the anatomy of the vascular and level coincide with the concept. One case, male, 69 years old. LR-CME was performed in our department. Following we will introduce correlation experiences and skills of LR-CME. It took about 110 minutes to finish the whole operation with bleeding of about 20 mL. This case recovers well postoperation without any significant complication and discharged from hospital on the 10th day.

Keywords: Ascending colon carcinoma; laparoscopy; complete mesocolic excision operation skills

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Introduction

Jacobs first describes laparoscopy-assisted right hemi colectomy (1). Clinical trials have proven laparoscopy-assisted right hemi colectomy is feasible, safe and effective. 2009, Hohenberger, of Germany, and others (2) first proposed the new concept of complete mesocolic excision (CME). Recent research has proved, CME improves the surgical quality with keeping more harvested lymph nodes (3) and better effect of oncology (4). There are two different operation ways (middle approach and lateral approach) for laparoscopy-assisted right hemi colectomy. More surgeons choose middle approach that marked by ileocolic artery and superior mesenteric vein. Some studies indicate that middle approach has obvious advantages in complication and shorten the hospitalization time (5).

Methods

Surgical indications

The tumor is located in the ileocecal junction, ascending colon, hepatic flexure of colon, the right side of the transverse colon. Operation method obtained the informed

consent. Cases of exclusion criteria: (I) the diameter of tumor >8 cm; (II) with ileus or enterobrosis and accepted emergency surgery; (III) IV period tumor or tumor invading other organs were found during the preoperative or operative; (IV) others can't tolerate laparoscopic surgery.

Surgical position

Under general anesthesia, the patient was placed horizontal position with legs split. The surgeon was positioned on the left side of the patient, with the camera operator between the legs and the first assistance on the right of patient. And then place the patient at foot-high right side tilt position with starting the operation.

Surgical procedures

Incise 1cm skin in the middle point of 3–5 cm below the umbilicus. And making a 12 mm trocar as an observation hole. Building pneumoperitoneum and keeping the pressure in 12–15 mmHg. Chose a 12 mm trocar as the main operation hole under the umbilical 3 cm and left about 4 cm. Keeping three 5 mm trocars separated into the holds of

under the umbilical 3 cm and right about 4 cm and the intersection points above the umbilicus 4 cm level and left and right collarbone midline.

The first step of the operation is abdominal exploration with a 30 degree camera to know whether there has any metastasis or invasion to adjacent organs and to verify the position, size and degree of external invasion. Then we cut the mesentery with ultrasound knife along the front left of superior mesenteric vein surgical trunk. Lymph nodes and adipose tissue around the roots should be dissected and the ileocolic vessel and the right colonic vessel should be ligated.

Cut avascular area in the left of the middle colic artery above the pancreatic body on the edge of the left transverse mesocolon root. Separation of the middle colic artery around to the branch in the colon, keep left to cut off the right one.

Along the ileocolic vein cut back the mesocolon, where we can enter the Toldt's fascia and extend it. If we enter the correct space, we can separate the ascending colon from retroperitoneum without bleeding. The last step of laparoscopy is to divide other ligament of ascending colon so that we can mobilize the ascending colon completely and reconstruct the digestive tract.

Results

The postoperative pathological says: colonic mucinous carcinomas have infiltrated all layer of serosa. Vascular cancer embolus can be seeing. There are two paracolic lymph nodes with metastasis, other 22 lymph nodes from colic mesentery and surgical trunk without metastasis.

Discussion

The CME proposed by Hohenberger *et al.* (2) brings a completely new concept for advanced colon cancer of normative surgery. CME was performed in 1,438 cases and proved that CME can improve 5-year survival rate after surgery and reduce relapse rate. The difference of the beginning time and the case numbers of such surgery lead to unbalance development of operation. There isn't normalizing surgery control criteria.

We support that there are three keys in Laparoscopy-assisted CME for right-hemi colon cancer: (I) first cut down the right-hemicolon feeding arteries which left to superior mesenteric vein surgical trunk and clear away 203, 213 group lymph nodes. Then dissect avascular area which in the left of middle colic artery of inferior border of body of pancreas and clear away 223 group lymph nodes; (II) identify the surgical plane and mesocolon can't be destroyed; (III) emphasizing block resection of lymph nodes

and mesentery.

Conclusions

LR-CME is safe and efficient for the tumor locates in the right hemicolon.

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None.

Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.

Informed Consent: Written informed consent was obtained from the patient for publication of this manuscript and any accompanying images.

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