Introduction

Laparoscopic surgery has been enthusiastically applied to the resection of colorectal cancer for more than many years. Nowadays, more and more colorectal surgeons believe that laparoscopic approach gains quicker functional recovery, achieves comparable (1-3), and even better oncologic results (4,5) for the treatment of patients with colorectal cancer. However, the safety of laparoscopic left hemi-colectomy for cancer remains to be established, owing to its exclusion from previous randomized controlled trials. Laparoscopic left hemi-colectomy, involving the takedown of splenic flexure, has been more challenging than the other laparoscopic colorectal procedures. Because there is the technical variability between colorectal surgeons, the clinical trial of laparoscopic left hemi-colectomy which required the takedown of splenic flexure for the curative resection of cancers and tension-free colonic anastomosis has been rare. This video article aims to describe safe and feasibility of laparoscopic left hemi-colectomy (Figure 1) (6).

Discussion

Cancer of splenic flexure is rare, comprising only 2% to 5% of all colorectal cancers (7-10). Very few studies have specifically investigated the use of laparoscopic left hemi-colectomy for cancer (11). However, surgical approaches for transverse or descending colon cancer vary considerably depending on the relative location of the tumor. Thus, the purpose of this video article is to show safe and efficiency for the tumor locates in the left hemi-colon.

Laparoscopic left hemi-colectomy is suitable for the tumors locate in distal a third of the transverse colon, splenic flexure, descending colon and upper sigmoid colon. Left hemi-colectomy was defined as a procedure requiring division of the left colic and the left branch of the middle colic vessels at their origins. Generally, left hemi-colectomy was carried out for stage I/II/III tumors. Briefly, the surgeon and camera operator stood on the right side of the patient, with the first assistant positioned to the left or between the legs of the patient. Medial-to-lateral retroperitoneal dissection was performed to allow division of the left colic artery. The inferior mesenteric vein was divided near the inferior border of the pancreas. The omentum was then transected to allow entry into the omental bursa (lesser sac) and mobilization of the splenic flexure. The left branch of the middle colic vessels was identified at the inferior border of the pancreas and divided at its origin. The specimen was extracted through the camera port, which was extended to about 4–5 cm, and the anastomosis was formed extracorporeally by functional end-to-end anastomosis or intracorporeally by side-to-side anastomosis using linear staplers.

The blood supply to distal a third of the transverse colon, splenic flexure, descending colon and upper sigmoid colon has shown to vary between patients. Specifically, blood is carried by the inferior mesenteric artery through the left colic artery in 89% of cases and by the superior mesenteric artery through the middle colic artery in 11% of cases (12). The optimal surgical treatment for left hemi-colon cancer remains controversial. Some surgeons have argued that subtotal colectomy or extended right hemi-colectomy improves oncological outcome (7,13). However, other studies have demonstrated that the prognosis for left hemi-colon cancer is no worse than for other colon cancers,
and that left hemi-colectomy is sufficient for a satisfactory oncological outcome (8,9,14). A recent study showed that complete mesocolic excision in the mesocolic plane with central vascular ligation is associated with the removal of more mesocolon and a greater lymph node yield, and might improve 5-year survival (15). In this video article, it was considered the optimal method to remove cancer that inferior mesenteric artery, vein and their branch should be dissected and the vessels for descending colon should be ligated.

Laparoscopic left hemi-colectomy involves splenic flexure mobilization, which has been reported to be technically demanding (16) and associated with greater intraoperative blood loss and intraoperative complications (17). Intraoperative complications occurring during laparoscopic left hemi-colectomy included bleeding from the pancreas or spleen, which was difficult to repair by laparoscopy and required transfusion. Minimizing intraoperative complications and the need for conversion to open surgery during laparoscopic left hemi-colectomy will require careful case selection and experienced surgical teams. So, laparoscopic left hemi-colectomy is really difficult for many surgeons, especially for young. First attempt should be on the base of wealthy experiences of laparoscopy techniques. It had better be under guidance of the experienced surgeon. When laparoscopy is hard to go on, we should convert to laparotomy as soon as possible.

Prospective study for short-term and long-term outcomes is needed to demonstrate that laparoscopic left hemi-colectomy is more feasible and has significant advantages. Through further research, laparoscopic left hemi-colectomy will be established procedure.

Conclusions

If a laparoscopic left hemi-colectomy is performed in the experienced center and if it is performed on appropriate patient groups under accurate preoperative diagnosis, it should be a safe and useful treatment for left hemi-colon cancer.

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Footnote

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


References


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