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Review

Total laparoscopic right colectomy: The duodenal window first approach

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ABSTRACT

Background: Total laparoscopic right colectomy (TLRC) is a demanding procedure requiring laparoscopic skills and expertise in surgical oncology. Identifying the correct plane of dissection may be difficult. A correct management of ileocecal and right colic vascular pedicles is pivotal to achieve an oncological resection and the adequate blood supply of ileal and colic stumps.
Methods: We describe a technique for TLRC with a duodenum-first approach. Using three ports, dividing the "duodenal window", ileocecal and right colic vascular pedicles, and the right ureter are easily identified. The procedure is completed with an intracorporal stapled side-by-side anastomosis.
Results: In 2014, 19 patients underwent TLRC using this technique. The median operative time was 178 min (132–237 min) and median intraoperative blood loss reached 60 mL (10–400). Conversion rate was 15.8%. No urinary tract, vascular, duodenal injury or anastomotic fistula were reported. Fifteen patients (79%) underwent a colectomy for cancer with a median of 16 (7–27) harvested lymph-nodes and 100% of R0-resection.
Minor morbidity (Clavien-Dindo I-II) was 52.6% mainly related to cardiopulmonary complications (26.3%). Severe morbidity (Clavien-Dindo $\geq$ III) was 10.5% (two patients), including one reoperation (due to a sepsis related to an intra-abdominal abscess) and one death (due to complications of an aortic aneurism). Median hospital stay was 7 days (2–23 days). Long-term outcomes are unremarkable.
Conclusions: Using three trocars, the "duodenal window" approach to TLRC is technically feasible and safe, with good outcomes. The early access to the duodenum and the exposure of ilea-cecal and right colic pedicles rationalizes the procedure.

Total laparoscopic right colectomy is a demanding procedure, requiring an adequate laparoscopic training [1]. Considering the laparoscopic approach and as it has been demonstrated, it should be solely evaluated, without left colectomy [2], owing to technical and anatomical specificities. Still, some recent studies suggest that the laparoscopic approach (compared to open approach) decreases perioperative morbid-mortality [3] and improves recovery during postoperative course [4]. Also, intracorporeal ileo-colic anastomosis (compared to extracorporeal anastomosis) seems to improve short- and long-term outcomes [5], mainly major complications. Finally, no difference in the number harvest lymph nods between the ileo-colic vessels ligation and the mesenteric root stapling has been found [6]. Owing to these scientific results, the anatomical patterns of the right colon and the oncological requirements, we described a new technique regarding total laparoscopic right colectomy with three 10 mm diameter operative ports, using the duodenal window first approach (presented in a video). Using the duodenal first approach enables to easily identify the right ureter (behind the duodenum), the ileo-cecal pedicle and the right colic pedicle, potentially reducing risk of intraoperative injury and bleeding and, due to the recognized vascularisation, to avoid anastomotic or stump leakage related to ischemia. Considering the

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anastomosis, it was performed as an intracorporeal ileo-colic isoperistaltic side-to-side anastomosis using a stapler. The specimen placed in a bag was removed using a sus-pubian incision (Pfannenstiel). Using this specific technique, 19 patients were operated in 2014 and we analyzed intra-operative and post-operative outcomes. The median operative time was 178 min (132–237 min) and median intraoperative blood loss reached 60 mL (10–400). Conversion rate was 15.8%. No urinary tract, vascular, duodenal injury or anastomotic fistula were reported. Fifteen patients (79%) underwent a colectomy for cancer with a median of 16 (7–27) harvested lymph-nodes and 100% of R0-resection.

Supplementary video related to this article can be found at http://dx.doi.org/10.1016/j.suronc.2016.04.001.

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Conflict of interest

None.

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