



Laparoscopic total abdominal colectomy as first step of three-stage surgical treatment of ulcerative colitis: a systematic approach

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Introduction

Laparoscopy is a safe approach for surgical treatment of ulcerative colitis (UC), with good short-term outcomes [1, 2]. Long-term advantages of this minimally invasive technique are a reduction in adhesion formation, lower rates of infertility and less incisional hernias [3, 4]. Using a systematic approach allows for a standard teaching method for academic institutions and trainees. The attached video shows a systematic approach to laparoscopic total abdominal colectomy (LTC) in a UC patient as step 1 of a 3-step approach, which is followed by laparoscopic completion proctectomy and pouch creation as step 2, and closure of diverting loop ileostomy as step 3.

Case presentation

A 56-year-old female was diagnosed with UC in 2014. She was increasingly refractory to treatment with biologics. When seen in clinic, she was on vedolizumab and she was off infliximab, adalimumab, and steroids. She had 10–20 bowel movements per day and reported fecal incontinence with diarrhea. She had been hospitalized in July 2017 locally for dehydration and fever, which was likely due to a flare of her known UC. A computed tomography enterography in February 2016 had not shown any small bowel involvement. During a flexible sigmoidoscopy performed on the same

day, the inflammation of the mucosa was characterized by congestion, edema, erosions, erythema, friability, and deep ulcerations found in a continuous and circumferential pattern from the anus to the upper left-sided colon.

Procedure

With the patient placed in modified lithotomy position, a short midline incision was made below the umbilicus, and gradually the abdominal cavity was entered. A 12-mm balloon trocar was placed as camera trocar, and pneumoperitoneum was established. Three 5-mm trocars were placed in the left lower, left middle, and right middle abdomen and one 12-mm trocar in the right lower abdomen. A medial to lateral approach was applied for the dissection of the entire colon. The procedure was started at the right colon, progressing towards the transverse, descending and sigmoid colon. Colonic segments were devascularized and then mobilized using a sealing device for safe dissection and hemostasis during the procedure. The left ureter, left gonadal vessels and both hypogastric nerves were carefully preserved and dissected posteriorly. A short lower midline incision was made above the symphysis and the mobilized rectum and colon were protruded in front of the abdomen until the ileum showed up; it was transected using an Endostapler and a 60-mm cartridge. The entire small bowel was run down from the ligament of Treitz towards the ileum to rule out any twisting of the mesentery. Finally, at the premarked spot in the right middle abdomen, an opening was created and the ileal stump was protruded in front of the abdomen. The operative time was 205 min, estimated blood loss was 20 ml, without any need for transfusion, and 1900 ml of intravenous fluids were administered. The patient's stoma started functioning on postoperative day 1 and a soft diet was well tolerated. The patient was discharged home on postoperative day 2 in stable condition. No 30-day postoperative complications occurred.

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Conclusions

Laparoscopic total colectomy for UC patients is safe, results in a short hospital stay, may reduce postoperative infectious complications, and should be the approach of choice in experienced hands.

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Compliance with ethical standards

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

Ethical approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee (Institutional Review Board of the Cleveland Clinic Foundation) 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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