Short term oncological outcomes of completely intracorporeal anastomosis after left sided robotic resections for colorectal cancer

Editor

Completely intracorporeal anastomosis (CICA) may facilitate faster return of bowel function, decreased length of stay, and allow flexible specimen extraction without compromising intra- and postoperative complications[1]. Most studies, including two recent randomized controlled trials focused on right-sided laparoscopic resections[2,3]. However, the robotic platform may portend further benefits for CICA, specifically with regards to lower conversion rates in technically challenging procedures[4]. With the addition of robotics the concept of CICA for left-sided colon and rectal resections is of interest, with the goal of translating the potential benefits seen with ileocolonic resections.

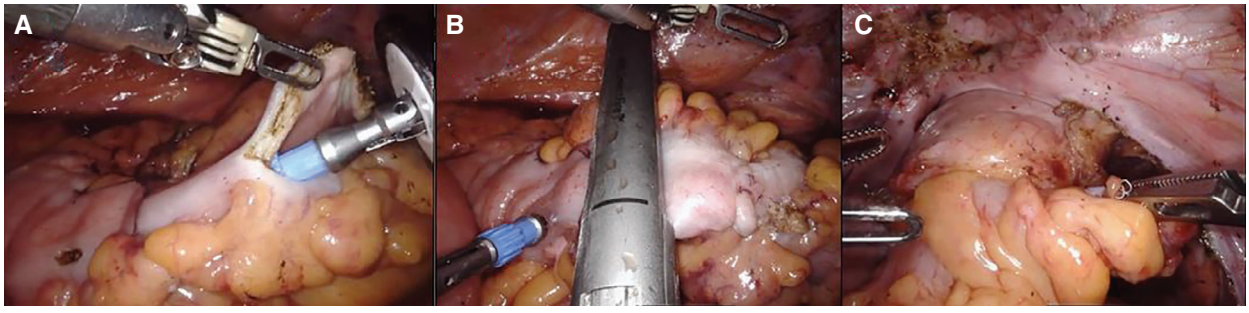
During right-sided resections, the actual tumour is never fully exposed to the peritoneal cavity, as both the terminal ileum and proximal colon are typically stapled off before anastomosis creation. The evolution of left-sided CICA at our institution was based upon creation of a fast, easily teachable and reproducible technique with good short term outcomes. However, this technique potentially exposes the peritoneal cavity to tumour cells through a controlled colotomy for anvil placement. Given the recent moratorium on transanal total mesorectal excision (TaTME) secondary to high rates of local recurrence, our institution felt it prudent to evaluate the short term oncologic outcomes of the CICA technique[5].

After institutional review board approval, all consecutive patients with biopsy-confirmed colon and rectal cancer who underwent robotic left-sided colon and rectal resections with CICA between July 2015 and April 2019 at Mayo Clinic, Rochester, MN were included. All procedures were performed by 2 colorectal surgeons with high volume robotic experience (K.T.B and S.R.K.). To optimize work flow, a 4 cm pfannenstiel incision is made at the start of the operation and secured with an Alexis™. All patients underwent high vascular ligation and resection according to established oncologic techniques. A completely intracorporeal Baker style anastomosis is created utilizing a circular stapler. The anastomosis involves creation of a 3·5 cm colotomy just distal to the planned point of proximal transection for anvil placement. This step occurs prior to stapling and complete isolation of the specimen and with that comes uncertain oncologic risk. The colotomy is closed with a barbed suture and the proximal colon is divided with the robotic stapler (Intuitive, Sunnyvale, CA). A stapled side to end anastomosis is performed under direct robotic vision (*Fig. 1*).

All patients were followed according to the American Society of Colon And Rectal Surgeons (ASCRS) recommendations. Only patients with at least 6 months of follow-up were included. The primary outcome was biopsy confirmed local recurrence or intraperitoneal metastasis. Secondary outcomes were nodal or solid organ metastatic recurrence.

Thirty-three patients were included; 18 (54·5%) were male, with a median age of 58·8 (IQR; 51 – 67) years. Most patients presented with stage II (39·4%) or stage III (30·3%) disease at the time of surgery. Three (9·1%) patients had stage IV disease with known liver and/or lung metastases. Eighteen (54·5%) patients received preoperative neoadjuvant radiotherapy, 14 (42·4%) received neoadjuvant chemotherapy, and 13 (39·4%) received adjuvant chemotherapy. Patients were followed up for a median of 16·5 (IQR: 11·3 – 20·7) months. No local recurrence or postoperative peritoneal metastases were detected; five (15·2%) patients developed distant metastases at a median of 5 (range: 2 - 9) months after surgery. Of these five patients with recurrence, two originally had stage IV disease and had curative operations for the primary tumour and metastases and the

Fig. 1 Technique Photo A shows insertion of the anvil through the controlled colotomy. Photo B shows application of the stapler with the distal colotomy closed. Photo C shows the orientation of the Baker style anastomosis



remaining three patients had stage III disease at original presentation.

The present pilot study assessing short-term oncological outcomes after implementation of a new technique for robotic CICA construction may help to mitigate safety concerns of local tumour spread during anvil placement for CICA creation, long term oncological safety needs to be further assessed.

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