



Minimally invasive colon resection for obstructing right colon cancer

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Minimally invasive surgery (MIS) such as laparoscopy and robot are now popularized for curative colon resection of colon cancer (1,2). As time goes by, growing number of colorectal surgeons are accustomed to MIS procedure. Thus, expansion of laparoscopic surgical indication is warranted in this MIS era (3-5). Laparoscopy has been performed for difficult preoperative conditions such as colonic obstruction, perforation, T4 tumor, or extracolonic organ involvement and showed acceptable outcomes in several studies (6-8). Kim *et al.* (7) investigated surgical outcomes of T4 colon cancer either through laparoscopy (n=51) or open colectomy (n=66). Converted cases were seven cases (13.7%). Short-term outcomes in terms of time to soft diet and hospital stay were shorter in the laparoscopy group, and R0 resection rate and 3-year overall and recurrence free survival rates were similar between the laparoscopy and open groups. The authors concluded that laparoscopy is a surgically and oncologically acceptable approach in well-selected patients with T4 colon cancer. Recently, Cirocchi *et al.* (9) performed systemic review and meta-analysis of laparoscopic versus open right colectomy for obstructing colon cancer. A total of five studies were included and all were retrospective single center series. Short-term outcome parameters such as 30-day overall complication rate and hospital stay were favorable in the laparoscopic group. Only one study showed no difference of 5-year overall survival rates between the laparoscopic and open surgery groups. The authors concluded that laparoscopy can confer benefits on patients with obstructing

right colon cancer. We do agree with the authors' conclusion. To date, we need more concrete evidences thus, future studies should be pursued.

Obstructing right colon cancer is closely related difficult surgical condition such as small bowel distention, colonic perforation with fecal contamination, or tumor fixation with T4 lesion. Therefore, preoperative patient selection is important for successful laparoscopic procedure. When planning to perform laparoscopy, preoperative computed tomography scan should be reviewed carefully. Preoperative counselling with patients and their family should include potential conversion to open surgery or inadvertent intraoperative complications. Early decided conversion to laparotomy did not compromise surgical outcomes (10). If intended MIS procedure cannot be performed smoothly, surgeons do not need to hesitate to perform open conversion. As shown by Cirocchi *et al.* (9), ileo-colic anastomosis is generally safe in terms of anastomotic leakage (11). However, distended or loaded bowel condition may preclude primary anastomosis thus, selective use of stoma formation may be useful. It has been shown that complete mesocolic excision (CME) for colon cancer is associated with favorable oncologic outcome (12). However, application of CME technique by MIS approach is not extensively studied for obstructing colon cancer (8). Laparoscopy could be useful as an initial approach for well-selected patients having obstructing right colon cancer. Future studies are warranted for proper MIS indication for obstructing right colon cancer.

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