



Is laparoscopic simultaneous resection for colorectal cancer and synchronous liver metastases safe and useful?

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We have read the article by Moris *et al.*, titled “Laparoscopic synchronous resection of colorectal cancer and liver metastases: A systematic review” published in the *Journal of Surgical Oncology* (1). We had considerable interest in their analyses on the outcomes of laparoscopic simultaneous resection (LSR) for colorectal cancer (CRC) and colorectal cancer liver metastases (CRCLM). Their study concluded that LSR is a safe and feasible approach compared to open simultaneous resection (OSR), for selected patients with synchronous CRCLM. On the other hand, they also stated that the number of patients included in the study was very small, and therefore the conclusion was considerably restricted.

The advantages of simultaneous resection for CRC and CRCLM are a considerably shorter length of total hospital stay and cancer-free condition, after one operation, without the risk of progression of the remaining tumor. In fact, simultaneous resections of CRC and CRCLM have been shown to be favorable in several studies (2-5). However, simultaneous resection should be discouraged when major hepatectomy or complex rectal surgery is planned, because of a significantly higher incidence of postoperative mortality and morbidity (6,7). Furthermore, based on data taken from the NSQIP database, synchronous resection was associated with a higher incidence of major complications, and the tendency was toward higher mortality (8). On the other hand, Abelson *et al.* reported that simultaneous resection was comparable to staged resection, even when the patients underwent more complex operations (hepatic total lobectomy and low anterior resection, or abdominoperineal

resection) (9). Recent progression of surgical skills and perioperative management might improve the postoperative outcomes of simultaneous resection for more complex procedures.

Laparoscopic procedure is being used increasingly for colorectal surgery and has become a gold standard in some countries. There are many reports comparing it to the open procedure, and the benefits of laparoscopic colorectal resection have been reported in various operative procedures and clinical settings. Regarding transverse colectomy, laparoscopy provides similar survival benefits, earlier postoperative recovery, and a shorter hospital stay (10). Laparoscopic rectal resection is associated with less blood loss and smaller incision length than open rectal resection, with no differences in postoperative morbidity and mortality (11). In the Cochrane Database Systematic Review, there is moderate quality evidence that laparoscopic total mesorectal excision results in better short-term postoperative outcomes in terms of recovery for non-locally advanced rectal cancer. The length of hospital stay was reduced, and the time to the first defecation was shorter. The estimated effects of laparoscopic and open total mesorectal excision on local recurrence and overall survival were similar (12). Laparoscopic abdominoperineal resection can reduce postoperative complications, and lead to faster postoperative recovery. In addition, laparoscopic abdominoperineal resection is not inferior to open abdominoperineal resection in terms of oncological clearance, recurrence rate, and long-term survival (13). Furthermore, laparoscopic colorectal resection, including complex procedures is safe and feasible

compared to open resection in terms of both short-term and long-term outcomes.

The use of laparoscopic liver resection (LLR) for CRCLM has a relatively short history and is still limited. The learning curve and operative devisal have been discussed, especially in major hepatectomy (14-17). Additionally, the operative time is often longer for LLR than for open liver resection (18,19). Of course, the advantages of LLR have been well known and include fewer complications, transfusions, and analgesic requirements; less blood loss and pain; shorter hospital stays; and improved cosmetic results (20-23). Comparable results were reported regarding the long-term outcomes of LLR for CRCLM (22,23). Thus, LLR is now developing and evolving, and may increasingly improve operative outcomes.

The laparoscopic approach reduces surgical wound trauma, leading to lesser postoperative pain and earlier postoperative rehabilitation; therefore, LSR could have advantages compared to OSR in terms of short-term outcomes, e.g., less pain and analgesic requirement, shorter hospital stays, and improved cosmetic results. Moreover, LLR decreases intraoperative blood loss owing to pneumoperitoneum and magnification of the surgical view. Therefore, LSR can overcome the concerns associated with major hepatectomy and complex colorectal resection. However, there are only a few studies on LSR; thus, further larger-scale studies are required in order to confirm these findings.

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