



Simultaneous resection of primary colorectal cancer and its liver metastases: why not?

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In patients with colorectal cancer and synchronous liver metastases the issue of performing a simultaneous resection of both the primary tumour and the liver metastases is a matter of much debate, especially among surgeons. The study by Howard *et al.* provides relevant information and is a nice reflection of general daily practice decision making in the Canadian surgical community (1). The obvious advantages of simultaneous resections are (I) one hospital admission versus two separate admissions (for separate treatment of the primary tumour and the liver metastases), (II) the risk of general postoperative complications associated with hospital admissions is reduced, and (III) the patient is cancer-free after one operation without the risk of progression of the remaining cancer, the primary in case of liver-first or the liver in case of colorectal-first. The fear of “summation” of complications of two major procedures into a potential life-threatening disease state can result in reluctance to perform simultaneous procedures. As pointed out by Howard *et al.* (1), there are observational series of patients in which it has been demonstrated that simultaneous surgery can be done with limited morbidity and mortality (2,3). The critical factor in these observational studies lies in the lack of knowledge to what extent selection bias contributes to the safety and feasibility of the combined surgical procedures. Similarly, several studies show that overall survival is comparable in the colorectal-first and the simultaneous approach (2,3).

Progression of colorectal liver metastases (CRLM) has been observed after surgical removal of the primary CRC (4-6). This results in drop-out of patients, in whom this progression prohibited resection of the liver metastases. Thus, based on the intention to treat principle, simultaneous

resection of both tumour locations will contribute to a more favourable survival for the patient group as a whole. In a study that matched patients based on prognostic oncological characteristics, the drop-out rate of 36.5% in the two-stage group was caused by tumour progression precluding liver surgery in the second stage (7). This might be caused by the inflammatory response after surgery, including a pro-angiogenic response which induces rapid progression of the remaining tumours (4-6). The criticism on the Viganò *et al.* study is that in the one-stage ultrasound-guided hepatectomy group, local resections of metastases were R0 in only 19%. Of note, this study analysed patients with advanced, wide-spread liver metastases (7).

We recently published results in which thermoablation as a treatment modality during simultaneous treatment of liver metastases was analysed with respect to complication rate, complication severity and patient survival (8). Independent risk factors for a higher complication rate were age >60 years patients and an abdomino-perineal resection performed. We found that the application of thermoablation during simultaneous surgery was associated with a lower complication severity and a comparable overall survival as compared to partial liver resection (8). In patients with bilobar liver metastases the combination of partial liver resection and intraoperative thermal ablation either by the HPB surgeon or a(n) (interventional) radiologist offers the opportunity to make the patient cancer-free in one surgical procedure. Thermoablation is a procedure with low morbidity and can thus be applied in patients with bilobar metastases in whom a partial liver resection is performed for large diameter or multiple metastases in one hemiliver and additional metastases in the other hemiliver (9).

Referral patterns and multidisciplinary tumour boards

There are some striking differences between our approach to patients with synchronous CRLM and the approach as described in the Canadian study (1).

First of all, 94.2% of all respondents had access to hepato-pancreato-biliary (HPB) surgeons, while only 59.6% of all surgeons stated that they consulted HPB surgeons in more than 75% of patients prior to resection of the primary tumour. This is remarkable because—as stated in the paper—all respondents believed HPB surgeons were the best in deciding true resectability of synchronous liver metastases. It is relevant to point out that (possibly outdated) beliefs in the minds of non-HPB surgeons might preclude surgeons from referring patients to a HPB surgeon. In current clinical care, bilobar metastases, portal lymphadenectomy and patient comorbidities are not absolute contraindications for simultaneous surgery.

We also understood from the paper that referrals from colorectal surgeons to medical oncologists and/or HPB surgeons are sequential actions. We strongly encourage to discuss these patients in a dedicated, multidisciplinary tumour board of HPB and colorectal surgeons, gastroenterologists, radiologists, radiation oncologists, pathologists and medical oncologists. This offers the possibility of instantaneous decision making with all relevant specialists. Nowadays even in a huge country like Canada teleconferences should make it possible to organise a multidisciplinary tumour board meeting and discuss the most optimal strategy for these patients.

Diverting stoma

A main reason not to perform simultaneous surgery is the risk of postoperative morbidity and mortality, especially in patients classified as ASA 3 or 4 (2,3). One of the most feared complications after colorectal surgery is anastomotic leakage, especially in patients after major liver surgery. These patients are not able to cope with septic episodes associated with anastomotic leakage. It is our policy to liberally place diverting stomas in this patient category. A review by Hanna *et al.* [2015] concluded that a diverting stoma significantly decreases the risk of anastomotic leakage and the need for urgent re-operation when a leak does occur. This is especially true in low colorectal anastomoses (10). The Howard paper showed that less than 10% of the colorectal surgeons often or always protects

their anastomosis with a diverting stoma (1), which seems a low percentage as a diverting stoma might mitigate the consequences of this feared complication. Similarly, in an emergency situation in which an ileus or sub-ileus warrants prompt action, a diverting stoma will solve the acute situation followed by proper radiological staging after which the tumour board will discuss the most appropriate treatment strategy.

Conclusions

The Howard paper points out that improvements can be made in the therapeutic strategy applied to patients with synchronous liver metastases. The first step would be early discussion with or referral to a hospital with a dedicated multidisciplinary tumour board. Although it is still a matter of personal opinion, there is sufficient data that simultaneous resection of both primary colorectal cancer and synchronous liver metastases is a safe and feasible treatment in selected patients. Liberal placement of a diverting stoma might help in reducing postoperative anastomotic leakage. Application of intraoperative thermoablation of non-resectable liver metastases will also contribute to the ultimate aim: try to make the patient cancer-free in one procedure.

Acknowledgments

None.

Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.

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