

Selected Summaries

Is it possible to retrospectively evaluate multivisceral resections for locally advanced colorectal cancer in a population?

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SUMMARY

Multivisceral resection (MVR) for non-metastatic, locally advanced adherent colorectal cancer continues to be a much publicized but infrequently practised procedure. This retrospective, observational study was designed to evaluate patient-, tumour- and therapy-related factors influencing MVR for locally advanced adherent colorectal cancer as well as the outcomes of these procedures on patient survival in the USA.

The study included all patients above 18 years of age with non-metastatic, locally advanced adherent colorectal cancer who underwent MVR between 1 January 1988 and 31 December 2002—the records obtained from the Surveillance, Epidemiology and End Result (SEER) registry that covers 11 American regions. Patients with T4 non-locally advanced adherent colorectal cancer were identified for the comparison cohort.

In the absence of the exact date of surgery in the SEER data, the authors arbitrarily studied short term mortality (perioperative) at 1 and 6 months following surgery, with the assumption that all patients must have undergone surgery within 4 months of the diagnosis. Logistic regression was used to examine patient-, tumour- and geography-related aspects of MVRs. Kaplan–Meier estimates were used to obtain the 5-year survival rate and Cox proportional hazard model for adjusted risk of deaths.

Of the 229 538 patients with colorectal cancer, 9651 (42%) had locally advanced adherent colorectal cancer. A total of 8380 patients had undergone a surgical resection, of which only 33.3% had MVR (regional range: 26%–38.7%).

The mean age at diagnosis was 69.4 years with a predominance of white women among the patient sample. The primary tumour was colonic in 79.2% and rectal in 20.8% of patients. The proportion of patients with rectal cancer undergoing MVR (34.7%) was statistically significant compared to those with colon cancer undergoing MVR.

The factors associated with an increased chance of MVR in colon cancer were: Age at diagnosis <80 years, female sex, lower tumour grade, negative lymph node status, SEER region, left-sided cancer and receipt of adjuvant therapy (radiotherapy). In rectal cancer, female sex and SEER region were positively associated with undergoing an MVR. Race did not appear to

play a role, while neoadjuvant radiotherapy was negatively associated with the likelihood of MVR in rectal cancer. MVR was associated with an improved survival in cancers at both locations—colon (hazard ratio [HR]: 0.89, 95% confidence interval [CI]: 0.83–0.96) and rectal (HR: 0.81, 95% CI: 0.70–0.94)—without any increase in short term mortality. In unadjusted analyses, this survival was even better than that in patients undergoing standard surgical resection. Nodal status and radiation therapy did not play a role in this survival benefit.

The conclusion was that most patients with locally advanced adherent colorectal cancer did not undergo MVR. However, among those who did, overall survival was improved without an increase in perioperative mortality. The authors have discussed their views on the favourable results obtained in young patients and in women, who probably better tolerated longer surgery and wider resections (pelvic exenterations), respectively. The fewer number of MVRs have been explained on the basis of a probable role of additional factors that influence decision-making in such cases including patient wishes, co-morbidities, nature and extent of preoperative work-up, and regional variations in the level of surgical expertise and support systems available. They attributed the negative relation of neoadjuvant radiotherapy to erroneous judgement of malignant adhesions as radiation-induced inflammatory adhesions. Finally, they also pointed out the pitfalls in their paper which they attribute to the retrospective nature of the study, viz. the lack of certain essential data such as margin status, failure to recognize adjacent organ involvement pre- or intraoperatively, co-morbidities, chemotherapy data—all factors which could, in themselves, influence survival. In this light, they invite further studies targeting the issues of hospital organization and structural processes influencing MVR.

COMMENT

Non-metastatic, locally advanced adherent colorectal carcinoma, which accounts for 5%–15% of patients with primary cancer, include those tumours that directly invade adjacent organs in the absence of distant metastasis.^{1,2} The current understanding of the biology of colorectal cancer propels the belief of radical management, whenever feasible, based on the results of improved survival following R0 resections even when it entails removing surrounding organs involved by the disease.^{3,4} These MVRs could involve an associated minor resection anastomosis for an adherent and involved small bowel loop, to *en bloc* pancreaticoduodenectomies,⁵ splenectomies, wedge resections of liver edges (non-metastatic), to pelvic exenterations in rectal cancers. The earlier documented increase in perioperative morbidity following MVR has been countered by recent reports of better outcomes when such procedures are performed in large-volume surgical centres.⁶ Survival rates have been consistently good after these resections with some series documenting survival rates similar to those for standard resections for T4 lesions, not involving adjacent viscera.⁷

Other problems cited in relation to MVR have been the lack of ability of preoperative imaging modalities to consistently detect surrounding organ involvement.^{7,8} This often leads to the surgeon (who may not have the facilities or expertise for a major resection) being faced with the daunting task of performing a procedure as

large as an *en bloc* pancreaticoduodenectomy when exploring a patient for a hepatic flexure cancer. The usual response is to back out by labelling the patient unresectable. It is important to remember that during surgery it is not possible to distinguish between carcinomatous and inflammatory adhesions.^{7,8}

Patient-related factors such as co-morbidities obviating major surgical procedures, lack of consent from the patient/guardian, lack of good critical care support following resection, and lack of surgical expertise to perform such procedures, are frequent challenges in performing a curative MVR.

This study is a laudable attempt to holistically assess an aspect of surgery that has been evolving over the past few decades and, till date, is not uniformly performed even in different regions of the same country. A break-up of resections undertaken over time periods within the study frame would have made for interesting reading and would have given the reader an insight into the trends in MVR in the USA. The good outcome obtained following MVR for locally advanced adherent colorectal cancer does provide a shot in the arm to proponents of the procedure. The study confirms some well known aspects of MVR: Higher success rates in women as compared to men, higher operability in left-sided lesions (since surgery of involved hepatobiliary structures is obviously more difficult and associated with higher morbidity and mortality if not done properly), and better survival in node-negative patients. It is also possible that the need for MVRs in younger patients could be because of the more aggressive nature of the disease leading to rates of multi-organ involvement at presentation. Yet another point that needed qualification was the observed negative influence of neoadjuvant radiotherapy. Present knowledge indicates that radiotherapy in the neoadjuvant setting may actually downstage rectal cancer and thus improve resection rates. Ongoing studies may shed more light on this aspect in the near future.

The results of the study do not contradict existing norms in the management of locally advanced adherent colorectal cancer. However, the impact and importance of factors such as status of the resection margin, American Society of Anaesthesiologists (ASA) grade, use of chemotherapy, timing of surgery after diagnosis, actual organs resected as part of MVR, should be addressed in future studies.

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