



Improving preoperative endoscopic localization of colon and rectal tumours

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We read with great interest the article published in *The American Journal of Surgery* by Yap *et al.* entitled “Colonoscopic localization accuracy for colorectal resections in the laparoscopic era” (1). The authors should be commended on their interesting study addressing an important aspect of preoperative planning in the increasingly established era of laparoscopic colorectal surgery.

The benefits of a laparoscopic approach to colon and rectal surgery have been well demonstrated, and this approach is used with escalating frequency with comparable oncologic results to open surgery (2). However, in contrast to open surgery which affords the surgeon the ability to palpate and confirm the location of masses intraoperatively, a laparoscopic approach is more dependent on accurate preoperative localization of the lesion. Efforts to understand and minimize errors in preoperative localization of colorectal lesions are therefore of relevance and importance to reduce the frequency of intraoperative changes to the surgical plan.

In their study, Yap *et al.* found that of the 221 colon and rectal masses retrospectively reviewed over a six-year period, only 175 (79.2%) had been accurately localized when intraoperative findings were compared with preoperative endoscopy reports. Of the 46 incorrectly localized lesions, 17 (37%) required an intraoperative change in the surgical plan, with three requiring ileostomy creation due to unexpected rectal lesions, and one requiring conversion from laparoscopy to open for palpation of the tumour (1).

Of the 46 lesions which were incorrectly localized preoperatively, the correct location was ultimately determined intraoperatively by tumour visualization in 26.1%, by visualization of endoscopic tattoo in 26.1%,

and by CT scan in another 21.7%. Of the remaining lesions, 19.6% were identified by means not specified in the operative report (1). In light of these findings, and given that all patients in this study underwent preoperative colonoscopy for diagnosis, it is notable that only 110 lesions (49.7%) were tattooed, and just 196 lesions (88.7%) had a documented staging CT to complete the patient's preoperative work up (1).

On univariate and multivariate analysis, Yap *et al.* (1) found that two factors influencing the likelihood of an incorrectly localized tumour remained statistically significant: (I) incomplete colonoscopy ($P=0.026$ on multivariate analysis); and (II) colonoscopy performed by an endoscopist with a gastroenterology (as opposed to surgical) background ($P=0.028$ on multivariate analysis).

Szura *et al.* (3) in their 2016 RCT found colonoscopic localization was accurate in 83.2% of the 129 patients in the study's endoscopy arm, although this number has been reported to be as high as 96–99% for studies examining single surgeon-endoscopists (4,5). While there has been recent discussion in the literature about endoscopy as the domain, preferentially, of the gastroenterologist, we feel that this study and the three referenced above (3-5) are reminders of the importance of a strong surgical presence within the endoscopy community. This ensures that the focus on preoperative planning and associated endoscopic considerations brought to bear by the operating surgeon can be shared and incorporated into future standards of practice to help minimize the risk of intraoperative localization errors, especially in the era of laparoscopy.

Yap *et al.* (1) also indirectly reinforce the importance of a complete diagnostic and staging work up for all colorectal

tumours, as well as a multidisciplinary team review of a patient's management plan. It is important to note that approximately three-quarters of incorrectly localized tumours could be correctly identified intraoperatively by systematic examination of the colon, aided by the presence of an endoscopic tattoo and a staging CT scan (1). The interdisciplinary review of a patient's work up prior to finalization of the management plan serves to improve communication between the endoscopist, surgeon, and radiologist with regards to localization and evidence of nodal or metastatic disease. In addition, this provides an opportunity to discuss the timing and order of surgery with medical and radiation oncologists, whose roles are essential in the management of colorectal cancers.

Finally, and perhaps most fundamentally, our group is not aware of any standardized definitions for the endoscopically determined location of colonic lesions. This lack of a shared endoscopic nomenclature creates inherent ambiguity in the subjective assessment of tumours described as being located within the hepatic or splenic flexures, or within the descending, sigmoid, or rectosigmoid colon. Even the definition of a rectal cancer has been debated, with no agreed upon standard to guide reporting. Given the importance of clear communication about tumour location between the endoscopist and surgeon for accurate preoperative planning and informed consent, the establishment of a standardized set of definitions for localizing colorectal tumours is an essential starting point.

Yap *et al.* (1) highlight an important topic in the surgical management of colon and rectal cancers, and reinforce the importance of interdisciplinary communication and collaboration to improve patient outcomes. The establishment of a shared endoscopic nomenclature defining tumour location, as well as the adoption of complete diagnostic and staging work ups as institutionally prioritized quality indicators are crucial steps toward minimizing incorrect preoperative localization of colon and rectal cancers in the era of laparoscopic surgery.

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