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COMMENTARY

Preoperative Colorectal-Cancer Detection: Do We Need Anything Else? An Invited Brief Commentary on Is CT Scan More Accurate than Endoscopy in Identifying Distance from the Anal Verge for Left-sided Colon Cancer? A Comparative Cohort Analysis

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Colonoscopy is the gold standard examination tool for the colon and rectum reducing incidence as well as mortality in colorectal cancer (CRC) with an estimated sensitivity that reaches 95% [1], even if several studies reported lower accuracy levels of less than 60% [2].

Unfortunately, as opposed to open resection, in the minimally invasive approach era the tactile feedback is completely lost [3], exposing to a possible removal of the wrong colonic tract or unexpected changes in the operation performed. A preoperative identification of the lesions can help to avoid this problem allowing to plan the correct surgical treatment.

To date, several localization techniques trying to improve pre-operative CRC detection have been described [4]. Among them, there is limited evidence that computed tomography (CT) may be useful in correctly localizing tumors that were incorrectly detected by colonoscopy.

For this reason, Costi et al. [5] conducted a prospective analysis comparing the accuracy of colonoscopy and 2D CT-scan in the pre-operative localization of left-sided colon cancer (LCC) using the intraoperative tumor distance from the anal verge (iTDAV) as a discriminating factor.

The endoscopic TDAV (eTDAV) was assessed preoperatively meanwhile the CT-scan TDAV (cTDAV) was measured retrospectively.

The authors analyzed a series of 28 patients, who underwent left hemicolectomy for LCC, reporting three main findings. Firstly, both CT-scan and colonoscopy overestimated TDAV, at least 3 cm, with a significant difference between cTDAV and iTDAV ($p < 0.01$). Interestingly, there was no significant difference between cTDAV and eTDAV. Secondly, the margin of error increased proportionally with increasing lesion distance from the anal verge. This finding confirms the potential superiority of colonoscopy and the greatest difficulty in the diagnosis of LCC due to the absence of endoscopic landmarks. Lastly, 78.6% and 60.7% of the lesions were found within 5 cm from eTDAV and cTDAV, respectively.

The severe standardization of the different localization techniques used and the blinded evaluation of the CT-scan, conducted by a senior expert radiologist, are the main effort of this study.

Preoperative colorectal tumor detection is crucial to plan the correct surgical treatment and even though colonoscopy remains the gold standard for the detection of CRC, the accuracy of localization is uncertain.

In fact, precise endoscopic localization is challenging due to the absence of reliable internal anatomic landmarks between the anal verge and the ileocecal valve [6].

Several risk factors for inaccurate pre-operative localization have been described in literature.

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According to Piscatelli et al. [6], the only risk factor is represented by previous colorectal resections with a significative evidence from both univariate and multivariate analysis. Conversely, Vaziri et al. [1] and Borda et al. [7] found, respectively, the increasing age of the patient and an incomplete colonoscopy as risk factors.

To increase the number of complete procedures, ensuring a high cecal intubation rate, many hands-on colonoscopy training courses are needed. Nevertheless, a recent Austrian study failed to demonstrate the role of endoscopists' specialty, which should have high-volume of colonoscopy per year, as a predictive factor for high-quality screening colonoscopy [8].

Regarding the relation between the colonic segment and the risk of missed location or wrong diagnosis, many authors identified a reduced accuracy for lesions located from hepatic flexure to the sigmoid colon when compared with ascending colon/caecum and rectum [1,2,9]. However, this topic remains controversial due to completely opposite published data [7].

In this context, radiological imaging, i.e., CT, can be useful to reduce the number of misdiagnosed tumor bringing to an optimal preoperative surgical planning.

In a prospective, observational, multicenter study, Bryce et al. [2] investigated the accuracy of colonoscopy and CT in 111 patients undergoing resection for a colorectal lesion. The accuracy rate of colonoscopy and CT-scan was, respectively, 79.3% and 86.0%.

Moug et al. [10], in a multi-center U.K. study including 364 patients with colorectal lesions, reported a preoperative accuracy rate of colonoscopy and CT of 82% and 73%, respectively, with a certain degree of discrepancy for CT-scan between screening and symptomatic patients (64% vs. 77%). Those results were consistent with the findings of Costi et al. [5].

The diagnosis of LCC is demanding due to the absence of anatomical and endoscopical landmarks between the sigmoid and descending colon.

The case series presented by Costi et al. [5], in addition to the retrospective design, has some limitations related to the small cohort of patients as well as the left-sided location of the tumors. Furthermore, the authors did not mention any on-table alterations in planned surgical management.

For all these reasons, further comparative multi-center studies concerning all the colonic segments

and comparing different localization techniques are needed.

DECLARATION OF INTEREST

The author declares that no conflicts of interest exist. The author alone is responsible for the content and writing of the article.

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