The right time for colonoscopy

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Colorectal cancer (CRC) continues to be one of the most frequently diagnosed GI malignancies worldwide, and fortunately, is potentially preventable. Colonoscopy remains as the most effective method for the diagnosis and treatment of preneoplastic lesions. Robust data over the past several years has emerged studying factors that are associated with high quality colonoscopy. Among these, the adenoma detection rate (ADR) is the most reliable parameter[1] to predict the risk of interval cancer (ie, CRC diagnosed between 6 months and 10 years after colonoscopy) and, consequently, decrease the diagnosis of established malignancy.

The ADR depends on multiple factors. A growing body of evidence suggests that the colonoscopy withdrawal time (CWT) is a crucial marker that correlates well with the ADR. Furthermore, this parameter can be monitored and modified to ultimately reach the optimal goals of an ADR higher than 20%. Thus, several studies have addressed its importance in the recent years.

Initially, a 6 min CWT during a 'negative colonoscopy' (which means no abnormal findings translating in the absence of therapeutic procedures performed) was suggested. In recent years, however, this time threshold has increased to 9 min[2]. This change of paradigm is a consequence of the increasing knowledge regarding the clinically significant serrated polyps (CSSP). CSSP have a predisposition for the proximal colon and their macroscopic appearance is more subtle than traditional adenomas. Thereby, their detection requires a thorough inspection of the mucosa, which leads to an increased evaluation time focused particularly on the proximal colon.

Kumar *et al* have recently confirmed that a longer CWT translates in a higher ADR and lower adenoma missing rate (AMR).[3] The AMR was defined as the number of adenomas detected during a second pass divided by the number of adenomas detected during both passes. In a nicely designed prospective study, two different time frames (3 min vs 6 min CWT) were compared controlling for the skills of the operators (each endoscopist served as their own control). Their findings suggested that a 3 min CWT was associated with a higher AMR. In addition, they stated that a 3 min CWT had also consequences in the surveillance times after colonoscopy by assigning longer periods than required and, thereby, increasing the possibility of an interval CRC. On the other hand, their analysis showed that 9 min CWT correlated with the highest polyp detection rates while maintaining an efficient consumption of time for the endoscopy unit. Interestingly, the advanced skills of the endoscopists who performed the procedures were not sufficient to compensate the AMR during a short CWT. This result emphasised the important role of this performance marker even in high-skilled endoscopists.

Presently, it seems unarguable that the CWT is directly associated with the ADR and, in result, the quality and efficacy of colonoscopies. On the other hand, the existence of a new malignancy pattern different from the conventional 'adenoma to carcinoma' pathway has also been proved since the description of CSSP, which most frequently arise from the proximal colon. However, the relation between the CWT and the different colonic segments had not been correctly established. Recently, Jung *et al* carried out a prospective study to determine this association.[4] Given the prospective design of their study, a negative withdrawal time was assured by removing from the final time count the procedural minutes spent on interventional procedures (such as polypectomy or biopsy) or optimising the visualisation (cleaning the mucosa or suctioning the excessive fluid). Their results showed that a CWT ≥4 min in the proximal colon was significantly associated with both a higher ADR and a higher detection of CSSP. Globally, they suggested an overall CWT of at least 7 min distributed in 4 min for the proximal colon and 3 min for the distal colon. Furthermore, they calculated a proximal–distal withdrawal time ratio (P/L ratio) by dividing the mean withdrawal time of the proximal colon by the time spent on the distal segment. They observed that a P/L ratio ≥1.5 significantly associated with higher ADR, which entails that the proximal colon withdrawal time should be at least 1.5 times longer than the distal one. Based on these results, a strategy to emphasise the detection of precancerous lesions (especially CSSP) in the proximal colon by increasing the time spent on exploring this segment should be implemented in every colonoscopy, with the goal of reducing the number of interval CRC.

In *Frontline Gastroenterology*, Al-Rifaie and colleagues aimed to confirm the already known association between the CWT and ADR in non-screening colonoscopies.[5] Due to the development and implementation of CRC screening programmes in the recent years, the colonoscopies that are performed under this indication are strictly monitored and standardised in order to meet the corresponding clinical guidelines designed ad hoc. Consequently, the majority of the studies published to date obtained their results from this particular population. In this analysis, the authors selected a complete series of non-screening colonoscopies demonstrating that the conclusions can be extrapolated to the general population.

One of the limitations encountered in this study was inherent to its retrospective design. As previously described, it is important to define the CWT as the time spent evaluating the mucosa, which necessarily excludes therapeutic procedures or any manoeuvre to clean the lumen. Herein, the review of the colonoscopy reports did not allow to exclude those timings. However, to minimise the distortion effect that this could cause in the CWT measurements, every colonoscopy with hot or multiple (defined as ≥3) cold polypectomies were excluded from the analysis.

A mean CWT ≥6 min was found in at least 80% of the colonoscopies included in the cohort. These results are noticeable given that there was obviously no Hawthorne effect influencing the outcomes, which translates into a high-quality clinical practice meeting current standards. Furthermore, in a specific subanalysis excluding those colonoscopies with polypectomies (that could falsely increase the final CWT) the mean CWT resulted even better (8.3 min).

A significant association between CWT and ADR was shown in their population. Moreover, an increased correlation between longer CWT and higher ADR was seen. This last result confirmed current trends suggesting that an optimal CWT should take longer than 6 min (particularly, in this study a threshold of 8 min correlated with the highest ADR).

I read with interest the result stratifications based on the endoscopist experience. As expected, the trainee group had a lower ADR (<20%). Despite this,

it struck me that the CWT did not differ between the experienced endoscopists and the trainee group. This resonates with the idea that, despite CWT being one of the main markers for optimal ADR, it should not be used as a standalone criterion. And, same as high endoscopy skills do not compensate the deleterious effect of a short CWT, longer CWT do not allow an optimal ADR in non-trained endoscopists.

In summary, this interesting study demonstrated that the current quality parameters, such as ADR and CWT, should be applied to every colonoscopy regardless of the indication. Thereby, we should not let our guard down when performing non-screening colonoscopies, and rather, should always aim to perform a high quality, meticulous inspection of the colon, with particular attention to the proximal colon.

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