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Could the sessile serrated lesion detection rate become an ESGE quality parameter?

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Authors

Cesare Hassan[1,2], Alessandro Repici[1,2], Tommy Rizkala[1], Michal F. Kaminski[3]

Institutions

1 Humanitas University, Department of Biomedical Sciences, Pieve Emanuele, Italy
2 Humanitas Clinical and Research Center –IRCCS-, Endoscopy Unit, Rozzano, Italy
3 Department of Gastroenterological Oncology, The Maria Sklodowska-Curie National Research Institute of Oncology, and Medical Center for Postgraduate Education, Warsaw, Poland

Corresponding author

Cesare Hassan, ONRM Hospital – Gastroenterology, Via Morosini 30, Rome 00153, Italy
Fax: +390658446533
cesareh@hotmail.com

Incorporation of quality assurance within organized population-based screening programs resulted in a profound decrease in colorectal cancer (CRC) incidence and mortality in European countries. In particular, three colonoscopy quality indicators have been consistently scrutinized in such programs, namely cecal intubation rate, rate of adequate bowel preparation, and the adenoma detection rate (ADR) [1].

What these indicators have in common is that they are clinically relevant, easy to monitor, susceptible to improvement, and complementary. Not only scientific societies, such as the European Society of Gastrointestinal Endoscopy (ESGE), set desired cut-offs for these indicators, but such cut-offs have been rapidly matched in most programs [2]. For instance, cecal intubation rate has dramatically reached the desired level of ≥90 % as a result of adequate use of sedation, improved technology, and retraining activities. Similarly, the level of cleansing has dramatically improved following implementation of split regimens and low-volume laxatives, achieving the desired levels of adequacy. Although the change has been more gradually, ADR has consistently improved in our screening programs, with most endoscopists significantly exceeding the 25 % cut-off currently recommended for primary colonoscopy screening.

There is a radical difference, however, between cecal intubation rate and adequacy of bowel cleansing, on one side, and ADR, on the other. The effect of the first two indicators is immediate and direct. Each patient leaving the endoscopy room is already fully aware of whether their own exam was or was not complete, as well as with or without adequate cleansing.

On the other hand, the effect of ADR is only indirect and uncertain. If at least one adenoma is detected, the patient will immediately be aware of it, but in the opposite case, the patient will never know whether there was really no adenoma or the endoscopist simply failed to detect it due to suboptimal competence. Dismally, only the occurrence of a post-colonoscopy cancer will reveal, with much delay, which of the two scenarios was actually true.

ADR is a surrogate for meticulous inspection. As such, it may fail to inform us about whether the entire mucosa was visualized (a proxy for that is withdrawal time), whether all adenomas were detected (a proxy for that is number of adenomas per colonoscopy) or whether other important precancerous lesions were detected. In particular, most of the ADR level of an individual endoscopist depends on diminutive tubular adenomas with low-grade dysplasia, but it is unlikely that these may progress to CRC in a relatively short time. Alternatively, we can presume that high-detectors are more meticulous in exploring the mucosa, increasing their chances of detecting more advanced lesions, but this phenomenon has never been clearly demonstrated. In addition, there is still uncertainty about the dynamic of the inverse association between ADR and CRC, with some studies suggesting a linear relationship and others a non-linear one with a very low discriminating cut-off.

For these reasons, the possibility of complementing ADR with additional indicators of endoscopist performance is desirable, and for several reasons, the rate of detection of sessile serrated lesions (SSL) is attractive. SSLs have been implicated in

approximately one-third of CRC carcinogenesis. Second, detection of these lesions requires a different level of competence as compared with that of adenomas because SSLs tend to be flat and lacking the typical neo-angiogenesis of the adenomas that create an immediate contrast between healthy and neoplastic mucosa. Third, endoscopists with similar ADRs may have different SSL detection rate, indicating the possibility of restratifying them in different classes of multidimensional competence.

An additional driver for inclusion of the SSL detection rate among the quality indicators for colonoscopy has been recent evidence about an inverse relationship between the level of detection of proximal SSLs by individual endoscopists and the risk of post-colonoscopy CRC after having adjusted for the individual ADR [3]. It may be argued that again, the plausibility of this association is unclear, as the vast majority of SSLs are not dysplastic at the time of diagnosis and unlikely to progress to CRC. However, it cannot be excluded that the level of SSL detection may be a marker of more meticulous exploration of CRC mucosa and greater ability to spot subtle lesions. In this issue, Edwardson et al showed a 20-fold increase in SSL detection rate in the last 10 years, indicating that this indicator is susceptible to improvement and somewhat reflective of the overall quality improvement in the setting of colonoscopy.

When considering the abovementioned criteria, it seems reasonable to include the SSL detection rate among the quality indicators in our screening programs. This indicator is clinically relevant because it is associated with the risk of post-colonoscopy CRC. It is easy to measure, only requiring cross-matching between the endoscopic and histological databases already created for ADR assessment. It is susceptible to improvement, as shown by the temporal trend in the analysis by Edwardson et al, as well as by the increase in SSL detection between the first and second year of training shown in the same American study. Finally, it appears to be complimentary to ADR because endoscopists with the same ADR may have different levels of SSL detection. Should ESGE, as well as other scientific societies, include SSL as a quality indicator of screening colonoscopy?

Despite the favorable evidence, there is still substantial uncertainty about the validity of such a choice. First, the pathological diagnosis of SSL is demanding and requires dedicated competence, while differentiating between adenomas and non-adenomas is much more robust and objective. For instance, the American series excluded proximal hyperplastic polyps in the definition of SSL, while several studies incorporate such lesions in the definition of SSL. Second, the cut-off for the SSL detection rate, at this stage, is unclear because it is affected not only by the competence of the endoscopists but also the prevalence of disease. For instance, the incidence of SSLs usually is described as much higher in the United States than in Europe. Third, prevalence of SSL appears to be a bystander to the healthy state of a patient rather than their risk of CRC. For instance. SSL prevalence is much higher in smokers than non-smokers, but it is not higher in subjects positive on immunochemical fecal testing as compared with those who test nega-

tive [4]. Fourth, it has already been shown that in general, the detection rates for adenomas and SSLs are correlated [5]. As already mentioned, there are some endoscopists with similar ADRs and rates of detection of SSLs; it is unclear what the additional contribution is of the difference in SSL detection to the already well-known relationship between ADR and CRC. Fifth, it is unclear whether simple retraining courses are able to improve the ability of community endoscopists to detect SSLs, as has already been shown for ADR. Sixth, surveillance protocols for SSLs are poorly defined and vary across different scientific societies, generating doubts about overdiagnosis in patients who have these lesions.

What we need at this stage is more evidence about the actual prevalence of SSLs across European countries, possibly within an organized program. We also need confirmation based on other perspectives about the association between SSL detection rate and CRC, as well as about a desirable cut-off for such competence. We need to exclude any harm that may come from overdiagnosis as well as overtreatment, because a good proportion of these flat lesions are over-centimetric. Finally, we need evidence that the rate of detection of SSLs can be improved within screening programs by use of reasonable interventions.

It could be argued that the advent of artificial intelligence will marginalize the role of such a quality indicator as well as that of ADR by assessing, patient by patient, the meticulousness of mucosal exploration and by spotting all SSLs seen by the camera. However, this does not eliminate the need for and the duty of any scientific society to establish the real benefit and harm of any quality intervention, irrespective of technology availability.

Competing interests

The authors declare that they have no conflict of interest.

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