“Resect & Discard” and “Diagnose & Leave”: What Should We Do in 2016?

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Introduction

The established paradigm for colonoscopists is to remove colorectal polyps and send the tissue for histopathologic interpretation, which is then used to determine surveillance intervals. However, most polyps detected and resected during colonoscopy are diminutive (≤ 5 mm). The prevalence of advanced histology in such polyps is very low, and there is increased risk and cost associated with universal resection and pathologic interpretation. In parallel, there have been significant advances in colonoscopic technology, with the development of image-enhancement modalities which allow the real-time distinction between neoplastic and non-neoplastic polyps.

Main Body

In 2011, the American Society for Gastrointestinal Endoscopy (ASGE) published a Preservation and Incorporation of Valuable endoscopic Innovation (PIVI) document addressing the real-time histopathological diagnosis of diminutive colorectal polyps. For resect and discard strategies for colorectal polyps ≤ 5 mm in size, the document states that endoscopic technology (when used with high confidence) to determine histology of polyps ≤ 5 mm in size, when combined with the histopathologic assessment of polyps > 5 mm in size, should provide a ≥ 90% agreement in assignment of post-polypectomy surveillance intervals when compared to decisions based on pathology assessment of all identified polyps. For diagnose and leave strategies for suspected rectosigmoid hyperplastic polyps ≤ 5 mm in size, the technology should provide ≥ 90% negative predictive value (when used with high confidence) for adenomatous histology.

Considerable evidence supports the use of electronic chromoendoscopy for accurate distinction between neoplastic and non-neoplastic polyps. Three main modalities (NBI, i-SCAN, FICE) are currently in wide clinical use, although NBI has been the best studied. Several studies and meta-analyses have shown that electronic image-enhancement modalities can achieve the 90% thresholds for the two PIVI strategies. However, most of the favorable data are based on results from expert endoscopists. When real-time histology is studied in community clinical practices, the results are less impressive. For example, in one study, 13 community endoscopists in Michigan USA underwent training in real-time histology using an NBI image library and real-time optical
diagnosis. Twelve of 13 subjects identified adenomas with 90% accuracy at the end of the computer study, but only 3 of 12 reached 90% in vivo accuracy. The agreement between surveillance recommendations informed by high-confidence NBI analysis of diminutive polyps and results from histopathologic analysis of all polyps was 80% (95% CI, 77-82%). For diminutive rectosigmoid polyps assessed with high confidence at the end of the study, adenomas were identified with NPV 91% (86-97%).

These observations have spurred interest in the development of training and educational interventions, which would allow community or inexperienced endoscopists to consistently reach the ASGE PIVI thresholds achieved by experts. In general, training interventions described in the literature are heterogeneous and have had variable effectiveness and durability. However, a recent study showed that an intervention combining ex vivo training with in vivo real-time predictions and regular performance feedback allowed inexperienced endoscopists to meet the ASGE PIVI thresholds, although most endoscopists require ongoing observation and auditing.

Several other systems-related barriers to more widespread implementation of the new paradigms exist, including the development of reliable audit tools, photo-documentation storage, standard medical-legal coverage, procedural coding and reimbursement, and overcoming resistance to change among medical professionals.

Conclusions

In 2016, the available technology allows the use of Resect and Discard and Diagnose and Leave strategies for diminutive polyps. However, the best results have been achieved mostly in academic settings and with experienced endoscopists. Widespread implementation requires the development and validation of reliable and reproducible training and auditing tools, and addressing systems-related barriers.

References

2. ASGE Technology Committee Gastrointestinal Endoscopy 2015;81:502-16.