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EDITORIAL

Optimizing Endoscopy Education in Gastroenterology Fellowship

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ABSTRACT

Education in endoscopy encompasses a wide breadth of topics and skills. Despite a shared interest in improving training in endoscopy, there is wide variation among programs, largely because of broad requirements put forth by the Accreditation Council on Graduate Medical Education. Historically, efforts to improve education in endoscopy were focused on numerics as a surrogate for competence. However, there is a role for "milestone" development goals to ensure trainees are on the right track to developing procedural competence. These milestones should encompass aspects of preprocedural assessment, intraprocedural technique, and postprocedural management and interpretation. Two important aspects of intraprocedural technique that are not universally emphasized among training programs but would be immensely beneficial to fellow education are (i) mucosal examination and (ii) device education. In this article, we will discuss the importance of developing the aforementioned skills and how we can approach a competency-based assessment of endoscopic skills during fellowship.

INTRODUCTION

Education in endoscopy encompasses a wide breadth of topics and skills. This includes understanding procedure indications, assessment of risks and benefits of proposed interventions, and standards of practice in endoscopic techniques. Over the past several years, there has been a movement to standardize and improve education in this aspect of gastroenterology training.[1–3] Despite a shared and growing interest in improving training in endoscopy, there is wide variation in the development and application of an intentional comprehensive endoscopic curriculum.[4] Specifically, there are no consensus topics that are required to be taught regarding endoscopy. The program requirements put forth by the Accreditation Council on Graduate Medical Education for clinical competencies among gastroenterology fellows is broad, thus, leaving room for variability among training programs.[5]

Previous efforts to improve endoscopic education were focused on quantitative metrics including procedural volume and completion. More recently, however, programs recognize that using numerics as a surrogate for competence are less valid or impactful than assessing components of the education around procedures, including preprocedural assessment, intraprocedural technique, and postprocedural management and interpretation.[6] As a trainee, it seems there are several aspects of successful procedure completion that can be further emphasized in gastroenterology educational curricula. Because graduate medical education embraces more competency-based medical education in the form of "milestone" evaluations, endoscopic procedures as "entrustable professional activities" should be dissected into smaller observable practices. These observable practices can, in aggregate, inform a more comprehensive assessment of procedural competency. Regarding the intraprocedural technique, beyond rates of completion and polyp detection, less obvious but just as critical, the aspects of learning can broadly be placed into 2 categories: (i) mucosal examination and (ii) device education. Because current gastroenterology training exists in a time-based system within a 3-year time constraint, milestone assessment can better ensure trainees are on the right path to gain competence in all aspects of gastroenterological procedures to avoid making up for deficiencies at the tail end of training or in early independent practice.

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MUCOSAL EXAMINATION

Polyp detection is only one part of trainee competence. Once a lesion is identified, an important next step critical to decision-making and outcomes is learning the appropriate management based on endoscopic appearance. Appropriate tissue examination and understanding a polyp's vascular pattern is just as important as being able to remove it. These skills are relevant to all trainees, not only those pursuing advanced resection techniques, because recognition of polyps that are inappropriate to remove is also key to performing a high-quality procedure. Teaching the value and methods of mucosal examination can be implemented with minimal cost and effort. For example, 1 study implemented a 20-minute video explanation of the Paris classification as an educational intervention that significantly improved the diagnostic accuracy of polyps among beginner endoscopists.[7] When retested several months after the intervention, however, diagnostic accuracy fell, implying the importance of instructional reinforcement and daily practice after an educational intervention is applied.

Another important aspect of polyp examination that fellows must be taught is documenting lesion granularity. Interestingly, in 1 study, a single educational intervention did not result in a significant improvement in lesion granularity classification among practicing gastroenterologists.[8] Such results imply that either further education is needed more widely among all practicing gastroenterologists or there should be an adjustment to the documentation system to ensure its universal use. These findings also highlight that for fellows to learn appropriate polyp examination, attendings must also be practicing these documentation strategies regularly and reiterating these methods to trainees to ensure their adoption of optimal practice patterns. The same teaching principles should be applied when examining nonpolypoid mucosa in areas of the gastrointestinal tract such as the esophagus and stomach. Although the argument can be made that there are only a few lesions requiring such assessment in clinical practice, this may open an opportunity for education using artificial intelligence to improve detection and documentation.

DEVICE EDUCATION

An equally important aspect of endoscopic education is understanding the tools and devices available. This encompasses teaching about everything from electrocautery to the structure of an endoscope and endoscopic tools. Although this is variable based on the devices and on-site manufacturer representatives at each institution, there are overarching concepts that should be routinely incorporated into fellowship training either in the form of lectures or hands-on sessions. For example, when searching on PubMed, there are more than a dozen articles describing the use of blended vs forced coagulation for polypectomy. Even more recently, there is literature supporting the use of cold snare as equally effective for large polyp resection. To appreciate and critically appraise updated recommendations in the literature, it is necessary to understand the mechanism behind each resection technique to make an informed decision about the risks and benefits of each tool. I consider myself fortunate to have participated in lecture series and hands-on sessions dedicated to endoscopic procedures during fellowship. Repetition and practice, however, is necessary, and a more robust and standardized curriculum in endoscopic devices would significantly increase fellow procedure skills and techniques.

MILESTONES AND COMPETENCY-BASED ASSESSMENT DURING FELLOWSHIP

Current program requirements for trainees and board testing for all gastroenterologists focus primarily on the cognitive component of gastroenterology. Although this is a substantial portion of our practice, endoscopic skills are equally relevant. Therefore, it would be immensely helpful for fellows to have specific goals to strive for with each year of training to ensure they graduate with the needed amount of procedural expertise. Just as milestones exist for clinical knowledge and decision-making, the same should be created for endoscopic skills at each level of training. On many occasions throughout training, my co-fellows and I questioned whether we were at the appropriate skill level for our time in fellowship. This concern could be addressed by setting transparent and specific goals in procedural competency that could be referenced to allow for self-reflection, personalized improvement plans, assessment, and growth.

It has been well understood that volume alone is not a sole indicator of competence, especially because this number may be different among trainees and programs.[9,10] Several competency-based assessment tools for procedural skills have been tested and validated, including the Mayo Colonoscopy Skills Assessment Tool and the ACE tool. This approach of assessment is supported by the American Society for Gastrointestinal Endoscopy.[11] The Accreditation Council on Graduate Medical Education has not yet made the same recommendation, and therefore, these tools are variably incorporated into fellowship curricula, although would significantly improve fellow confidence, consistency, and competence in procedure performance.

Our field bridges a gap between clinical and procedural fields. This poses a challenge in creating educational requirements for trainees to optimize clinical knowledge and endoscopic skills during a limited time frame. By identifying areas for improvement in education, fellow experience, and ultimately patient outcomes, can be augmented and standardized.

DISCLOSURES

Author contributions: DM Chalikonda and CH Henry contributed equally to the manuscript. DM Chalikonda is the article guarantor.

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