Endoscopic approaches to enteral feeding and nutrition core curriculum

This is one of a series of documents prepared by the American Society for Gastrointestinal Endoscopy (ASGE) Training Committee. This curriculum document contains recommendations for training, intended for use by endoscopy training directors, endoscopists involved in teaching endoscopy, and trainees in endoscopy. It was developed as an overview of techniques currently favored for the performance and training of endoscopy as it relates to enteral nutrition and to serve as a guide to published references, videotapes, and other resources available to the trainer. By providing information to endoscopy trainers about the common practices used by experts in performing the technical aspects of the procedure, the ASGE intends to improve the teaching and performance of endoscopy as it relates to enteral nutrition.

INTRODUCTION AND IMPORTANCE

Acquiring the skills to successfully place nasoenteric and percutaneous endoscopic enteral feeding tubes safely and effectively requires an understanding of the indications, risks, benefits, limitations of, and alternatives to, these procedures. As a prerequisite, competence in upper endoscopy is required, including visualization of the upper GI tract, minimizing patient discomfort, proper identification of normal and abnormal findings, and mastery of basic therapeutic techniques. The ASGE core curriculum document *Principles of Training in GI Endoscopy*[1] reviews requirements for endoscopic trainers and the training process itself. This document is recommended for all endoscopy trainers and trainees. Sections of the *Gastroenterology Core Curriculum*[2] (a combined effort of the ASGE, American College of Gastroenterology, and American Association for the Study of Liver Diseases) that review training in nutrition (pages 42-44) also are pertinent, because any decision to place enteral feeding access should be done in the setting of a full nutritional assessment and plan.

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GOALS OF TRAINING

The trainee and endoscopic experience

GI training programs should require trainees to have formal instruction in endoscopic placement of enteral nutrition access devices. Endoscopic access for enteral nutrition training should be incorporated into the standard 3-year gastroenterology fellowship program. The case volume necessary to demonstrate competence in enteral feeding tube placement will vary among trainees. We recommend, based on expert opinion, a minimum of 20 supervised endoscopic gastrostomy procedures before assessment of competency. There is increasing awareness that proficiency should be based on competency rather than absolute number of procedures performed, reflecting differences in individual learning curves; however, objective measures for assessment of competency in enteral feeding tube placement are yet to be defined and are currently based on expert opinion. Therefore, until objective measures are developed and validated, evaluation of competency will rely on subjective evaluation of direct observation by a qualified gastroenterologist. Competency should be demonstrated in both traditional two-provider and single-provider (where the percutaneous portion is assisted by a GI technician or nurse assistant rather than a second gastroenterologist) enteral feeding tube placement.

Faculty

Teaching faculty should not only be expert endoscopists who are committed to the entire training process (teaching and assessment) but are facile in the skills involved in instruction. The role of faculty in the training process of endoscopy is covered in depth in the document *Principles of Training in GI Endoscopy*[1] and is applicable to the endoscopic placement of devices for enteral nutrition as well. Program directors need to ensure that an adequate number of faculty who are qualified in the placement of enteral devices are available to ensure quality teaching and that some form of monitoring of faculty teaching occurs to ensure that the standards are maintained.

Facilities

Training programs must maintain an environment that is conducive to quality endoscopy education. This includes not only adequate procedural equipment, staffing, and compliance with work-hour guidelines but from a departmental and institutional standpoint as well. These issues

are addressed succinctly in the joint ASGE and American College of Gastroenterology document *Ensuring Competence in Endoscopy*[3] as well as the ACGME Program Requirements for Graduate Medical Education in Gastroenterology.[4]

TRAINING PROCESS: ENDOSCOPIC PLACEMENT OF DEVICES FOR ENTERAL NUTRITION

Overview

Trainees should have at least basic endoscopic skills (intubation of the upper esophageal sphincter, basic endoscopic tip control, use of buttons of the endoscope, passing devices down the working channel, etc) in diagnostic upper endoscopy before receiving training in enteral feeding tube placement. Trainees should have an appropriate balance of the technical aspects of enteral feeding tube placement as well as clinical patient care and didactics in nutrition during their training.

Preprocedure assessment

Ethics. The ethics of enteral feeding remains a difficult issue, in part because the endoscopist not only performs the actual placement of the feeding device but also has to decide whether the individual patient will derive meaningful benefit from device placement for enteral nutrition. There is no evidence that tube feeding improves comfort, survival, or functional status or prevents aspiration in many patient groups, including those with dementia.[5] These complex issues should be introduced to the trainee during formal teaching sessions as well as during each consultation in which endoscopic enteral feeding access is considered. Assessing the expectations of patients, family, and other caregivers and weighing the risks, benefits, and alternatives of enteral feeding access is challenging, but it is the responsibility of the entire multidisciplinary care team, including the endoscopist.

Indications, contraindications, and alternatives. Trainees must understand indications and contraindications for all endoscopic techniques of enteral access. Many contraindications to percutaneous enteral gastrostomy (PEG) tube placement have been rendered relative, because careful patient selection and strict adherence to proper technique may allow successful PEG placement in some patients with ascites,[6] severe obesity,[7] or peritoneal metastasis, for example. Trainees must be aware of situations in which short-term nasoenteric feeding is preferable to more permanent access and conditions in which standard PEG placement will be unsuccessful or problematic, such as with gastric resection, GI outlet obstruction, gastric dysmotility, and severe reflux. Jejunal feeding access may be preferable in some of these patients. The trainee should understand that PEG feedings or PEG with jejunal extension tube feedings (see the following) do not reduce rates of aspiration,[5,8,9] which is thought to be related to intragastric pressure.[10] The trainee should recognize when the patient would be better served by either a surgically or interventional radiology placed feeding tube such as in patients with severe obesity or multiple prior abdominal surgeries that may increase the risk of intestinal perforation.

Preprocedure assessment. The trainee needs to understand that special attention must be paid to issues of moderate sedation and airway assessment in these patients, many of whom have head and neck malignancies, stroke, altered mental status, or are elderly. ASGE clinical guidelines on *Training in Patient Monitoring and Sedation and Analgesia*[11] and *Modifications in Endoscopic Practice for the Elderly*[12] are important for trainees and trainers to review. As with all endoscopic procedures, a thorough understanding of the informed consent process, patient education, anticoagulation issues,[13] and antibiotic prophylaxis[14] is required of every endoscopy trainee. A thorough discussion of these issues is beyond the scope of this document and is covered in the respective ASGE guidelines referenced earlier.

PROCEDURE CONSIDERATIONS AND TECHNIQUES

The ASGE Technology Committee *Technology Status Evaluation Report on Enteral Nutrition Access Devices*[15] describes in detail the techniques of performing the various procedures that follow and thus, will not be reiterated.

Patient management and physician behavior during procedures

During endoscopic enteral access procedures, communication between the endoscopist and assistants is vital to ensure safety of the patient. It is important for the supervising endoscopist to recognize that this skill may be underdeveloped by the early trainee who is focused on the technical aspects of the procedure. As with any medical encounter, patient comfort, dignity, and privacy are of paramount importance and are skills best taught to the trainee by example and supplemented with constructive feedback.

PEG

Trainees should be exposed to and aware of the variety of PEG tube sizes (12F-28F), numerous PEG manufacturers with varying kits, and the techniques used for PEG placement, including peroral "pull"[16] and "push"[17] methods (direct percutaneous technique[18,19] is another option less commonly used by gastroenterologists in the United States). Most manufacturers offer both push and pull kits, allowing for individual preferences, and there is little data to support use of one technique over another.[20] A step-by-step description of the various PEG techniques and available gastrostomy tubes is outlined in the ASGE Technology Review on enteral nutrition access devices.[15]