Communication from the ASGE Standards of Practice Committee

NASPGHAN North American Society for Pediatric Gastroenterology Hepatology and Nutrition

GUIDELINE

ASGE American Society for Gastrointestinal Endoscopy

Modifications in endoscopic practice for pediatric patients

This is one of a series of statements discussing the utilization of GI endoscopy in common clinical situations. The Standards of Practice Committee of the American Society for Gastrointestinal Endoscopy (ASGE) prepared this text. In preparing this guideline, the MEDLINE and PubMed databases were used to search publications through the last 15 years related to pediatric endoscopy by using the keyword "pediatric" and each of the following: "gastrointestinal," "endoscopy," "colonoscopy," "inflammatory bowel disease," "sedation," and "anesthesia." The search was supplemented by accessing the "related articles" feature of PubMed with articles identified in MEDLINE and PubMed as the references. Pertinent studies published in English were reviewed. Studies or reports that described fewer than 10 patients were excluded from analysis if multiple series with more than 10 patients addressing the same issue were available. The resultant quality indicators were adequate for analysis. The reported evidence and recommendations based on reviewed studies were graded on the strength of the supporting evidence (Table 1).

Guidelines for appropriate utilization of endoscopy are based on a critical review of the available data and expert consensus. Further controlled clinical studies may be needed to clarify aspects of this statement, and revision may be necessary as new data appear. Clinical consideration may justify a course of action at variance to these recommendations.

Pediatric endoscopy is largely in the domain of the pediatric gastroenterologist. Occasionally, pediatric surgeons may be trained in endoscopy. Because children are not simply young adults, optimal performance of endoscopy in these patients requires an adequate knowledge and understanding of pediatrics and a thorough understanding of the child's medical background.[1] In many practice settings, however, adult endoscopists are called upon to provide advanced therapeutic endoscopic services, such as ERCP and EUS, or basic endoscopic services when pediatric gastroenterologists are unavailable. To provide appropriate care for the child in such circumstances, a team approach is required with the pediatrician or the pediatric gastroenterologist and the adult endoscopist. This document is intended to provide guidance regarding endoscopic practice issues that may differ in children. Because physiologic age is a continuum, this document is not intended to apply to rigidly defined age ranges. Where useful, such as among pediatric subsets, ages will be specified.

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INDICATIONS AND CONTRAINDICATIONS

The indications for upper endoscopy in the pediatric age group are similar to those for adult endoscopy[2,3] and are summarized in Table 2. The endoscopist must be aware of the fact that all infants, many children, and some adolescents cannot verbalize or describe symptoms accurately. Occult signs and symptoms that may prompt an endoscopy in infants and children include failure to thrive, limitation of usual activities, unexplained irritability, and anorexia.

Two other circumstances that occur more commonly in pediatrics and may require an endoscopy are the ingestion of foreign bodies and caustic substances. The protocol for endoscopic evaluation of foreign-body ingestion is well described in a previous guideline.[4]

Caustic substances include alkali (lyes), alkaline batteries, bleaches, and laundry detergents (powders and liquids). Acids are found in toilet-bowl cleaners, metal cleaners, and battery acids.[5] Poison control center staff can help identify the caustic substance and make recommendations.[5] History and physical examination findings suggestive of child abuse or neglect require further investigation.[5]

An upper endoscopy is the most useful means for evaluating esophageal, gastric, and duodenal injury because of ingestion of caustic substances.[5] However, universal performance of EGD in the setting of known or suspected caustic ingestion in asymptomatic patients (absence of drooling, vomiting, stridor, hematemesis, dysphagia, abdominal pain) or without oropharyngeal injury is controversial.[6,7] It is important to note that there is a lack of correlation between signs and symptoms and degree of esophageal injury.[5] An endoscopic grading system for severity of caustic ingestion exists (Table 3).[5] Early endoscopy seems safe and provides important prognostic information.[8] Use of a grading system also allows for stratification of therapy. Patients with grades 1 and 2a burns generally do well without aggressive therapy,[5] whereas those with grades 2b and 3 lesions are at risk for

TABLE 1. Grades of recommendation*

Grade of recommendation	Clarity of benefit	Methodologic strength supporting evidence	Implications
1A	Clear	Randomized trials without important limitations	Strong recommendation; can be applied to most clinical settings
1B	Clear	Randomized trials with important limitations (inconsistent results, nonfatal methodologic flaws)	Strong recommendation; likely to apply to most practice settings
1C+	Clear	Overwhelming evidence from observational studies	Strong recommendation; can apply to most practice settings in most situations
1C	Clear	Observational studies	Intermediate-strength recommendation; may change when stronger evidence is available
2A	Unclear	Randomized trials without important limitations	Intermediate-strength recommendation; best action may differ, depending on circumstances or patient or societal values
2B	Unclear	Randomized trials with important limitations (inconsistent results, nonfatal methodologic flaws)	Weak recommendation; alternative approaches may be better under some circumstances
2C	Unclear	Observational studies	Very weak recommendation; alternative approaches likely to be better under some circumstances
3	Unclear	Expert opinion only	Weak recommendation; likely to change as data become available

*Adapted from Guyatt G, Sinclair J, Cook D, et al. Moving from evidence to action. Grading recommendations: a qualitative approach. In: Guyatt G, Rennie D, editors. Users' guides to the medical literature. Chicago: AMA Press; 2002. p. 599-608.

complications.[5,9] In addition, one study compared early bougienage (performed during the first week after ingestion) to late bougienage (after the third week, if strictures had developed) in group 2b and 3 patients. Early bougienage did not prevent strictures, but, in this group, if strictures occurred, they responded more readily to subsequent dilation.[10]

Endoscopy is generally not indicated in pediatric patients for evaluation of symptoms or radiologic signs of uncomplicated gastroesophageal reflux (especially gastroesophageal reflux of infancy), uncomplicated functional abdominal pain, isolated pylorospasm, known congenital hypertrophic pyloric stenosis, constipation and encopresis, and exacerbation of previously documented inflammatory bowel disease that is responding to therapy. However, in some cases, a negative endoscopy can serve as reassurance to the patient and family that nothing has been overlooked in the evaluation.[11] Outpatient upper endoscopy in children is safe, though it is complicated by a sore throat and hoarseness in up to a third of patients.[12]

The most common indications for pediatric colonoscopy are shown in Table 4. Included among these indications for pediatric patients are surveillance for neoplasia in those patients with hereditary polyposis syndromes[13] and surveillance for rejection or other complications after organ transplantation.[14,15] At the time of both upper endoscopy and colonoscopy, routine tissue sampling is commonly performed because of an inability to adequately assess differences between normal and abnormal mucosa by using endoscopic appearance alone.[16]

Advanced procedures such as ERCP and EUS are also performed in children. However, the need for these procedures occurs far less frequently in children than in adults and, consequently, most pediatric gastroenterologists do not have the opportunity during training or in clinical practice to acquire and maintain proficiency in these procedures. Pediatric indications for ERCP are similar to those for adults, though with a much lower incidence of malignant diseases.[17-20] Technical success rates for ERCP are high; however, ERCP-related pancreatitis is not uncommon, and the risk and benefits should be carefully reviewed before proceeding.[19] EUS is indicated in pediatric patients for evaluation of upper–GI-tract tumors and pancreatic disorders, characterization of esophageal strictures, and, in selected patients, for the evaluation of eosinophilic esophagitis.[21-24] The use of EUS is also evolving for the assessment of the anal sphincter in children with constipation or continence problems and for evaluation of enteric duplications.[25,26] Currently, these procedures are often conducted by adult gastroenterologists because of the proficiency reasons previously mentioned.

Wireless capsule endoscopy (WCE) is used in children and appears to be safe and well tolerated.[27-30] Although similar indications for WCE in adults[31] generally apply to