



Anesthesia for Endoscopic Procedures: The New Frontier

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Keywords

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Key points

- The number and complexity of gastrointestinal procedures performed with the participation of an anesthesia team is rapidly increasing.
- Routine endoscopy is being performed on an increasingly complex patient population.
- The techniques and technology for endoscopy is dramatically expanding the scope of the practice, with many endoscopic techniques replacing the previous need for surgical intervention.
- The role of the anesthesia team is determined by the procedure, the technology, and the comorbidity of the patients.
- The anesthetic options include moderate sedation, deep sedation, and general anesthesia.
- Future expansion of the techniques performed in the endoscopy suite may result from natural orifice transluminal endoscopic surgery, which may allow cavity procedures to be performed endoscopically using natural orifice access (mouth, anus, vagina) and even potentially allowing thoracic, abdominal, and pelvic procedures to be performed without the traditional surgical approach.

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INTRODUCTION

The role of the anesthesia team in the gastrointestinal (GI) endoscopy suite is rapidly expanding with an increase in the number of patients and the number and types of endoscopic procedures being performed. Many of these procedures are partially or completely replacing the need for surgery or accomplishing tasks that were only possible with a surgical procedure. The level of participation by the anesthesia team is determined by the procedure, the urgency, and by the comorbidity of the patients. Both the technique and the technology of endoscopy are expanding the number of procedures being performed with the participation of the anesthesia service. Future developments including natural orifice transluminal endoscopic surgery (NOTES) will continue this trend for expansion of the scope of practice in the GI endoscopy suite. In this article, the authors outline many of these procedures with details about the endoscopic technique and the options for anesthetic management.

GASTROINTESTINAL ENDOSCOPIC PROCEDURES

Esophagogastroduodenoscopy

Routine esophagogastroduodenoscopy (EGD) is used for the diagnosis and treatment of pathologic findings in the esophagus, stomach, or proximal duodenum. Because GI bleeding can occur further into the GI tract, modifications of this technique have been developed to investigate the jejunum and further. Push enteroscopy involves the insertion of a longer endoscope 90 to 150 cm from the teeth, typically reaching the variable lengths of the jejunum but not the ileum. The diagnostic yield of diagnostic or therapeutic specimen retrieval of this technique is 25% to 40% [1]. Treatment of upper GI bleeding via EGD is facilitated by technical modifications that allow injection of vasoconstrictive or sclerosing agents (eg, epinephrine), thermal energy (eg, heater probe) electrocoagulation, heated probe insertion, application of mechanical devices (eg, metallic clips), and combinations of treatments [2]. Mucosal and submucosal lesions and gastric and duodenal lipomas can be completely resected with additional technical modifications of the EGD technique [3]. Additionally, radiation treatments for esophageal cancer are facilitated with insertion of plastic conduits for radiation pellets (brachytherapy).

To reach further into the small bowel, modifications of EGD have been introduced, including double-balloon endoscopy (DBE), single-balloon endoscopy (SBE), and spiral endoscopy, which are described in a subsequent section of this article.

Most patients for EGD receive conscious sedation, directed by the endoscopist and using midazolam and fentanyl. Anesthesia services are requested based on comorbidity, prior difficulty with sedation, or risk of aspiration. When anesthesia services are requested, propofol is the most commonly selected agent. When endotracheal intubation is chosen, the anesthetic technique focuses on rapid emergence because most of these patients are outpatients. When brachytherapy is the goal of EGD, it is particularly important to achieve excellent topical anesthesia, both for the procedure and for the hour after while patients go through the radiation treatment.

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