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Operational considerations for delivery of anesthesia in the ambulatory gastrointestinal suite

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ABSTRACT

As the need for Anesthesiology Services expands beyond the operating room to Gastroenterology venues, collaborative practice standards become increasingly necessary. Goal alignment is critical to assure patient safety, comfort, and optimized outcomes. Anesthesia standards of care and the normal cadence of running a gastrointestinal suite must achieve integration on both an operational and medical level. This becomes more difficult as procedural and patient complexity increase. Significant challenges discussed here include costs and format of preoperative assessment, mutually acceptable scheduling platforms, limitations of non-operating room venues, and management of costs and revenues.

1. Anesthesiologists in the endoscopy suite: Achieving operational goal alignment

1.1. Overview

Non-operating room (OR) anesthesiology encompasses a diverse set of procedures. The endoscopy suite is no exception. Historically, cases handled in this location targeted relatively stable patients, which infrequently required anesthesiology support and were relatively minor procedures. This is no longer the case. Rapid technological development has facilitated innovative and sophisticated approaches to disease states and target patients are more complex as the population ages and survival improves. Endoscopy procedures now include everything from minor to very major undertakings and range from day surgery cases to those requiring aftercare in the intensive care unit. In some instances, the cases are as demanding as the most advanced surgical OR procedures. Procedures include everything from screening colonoscopies to advanced therapeutic cases including endoscopic ultrasound, endoscopic mucosal resection, balloon-assisted deep enteroscopy, ablation of Barrett esophagus, per-oral endoscopic myotomy, endoscopic treatment of obesity, and the management of bariatric surgery complications [1].

In many hospital systems, endoscopy units now constitute the highest volume of cases performed in non-OR locations, and encompass a broad scope of procedural focus and patient characteristics. Often, patients deemed "too sick for surgery" and those who are critically ill or unstable make their way to endoscopy units. The heterogeneity of sick patients and novel cases poses significant challenges for interdisciplinary communication and collaboration. Performance of endoscopic procedures outside of the OR clearly constitutes a major expansion of the anesthesiology practice perimeter. Operational efficiency in the gastrointestinal (GI) suite requires the same if not more attention to rules and detail as in the OR. The need for anesthesiologists and gastroenterologists to acquire at least a cursory understanding of each other's practice and priorities is critical and can be daunting. Vocabularies are exclusive and often less than inviting. Awareness of potential conflicts between anesthesiologists and gastroenterologists can encourage collaborative preemptive planning, and enhance the implementation of collaborative strategy design. Only through goal alignment and compromise it is possible to achieve an operational medical and financial platform, which works for endoscopists and anesthesiologists alike.

2. Efficient management of anesthesia cases in endoscopy unit: Operational challenges

The mission of anesthesiologists is to safeguard our patients through their course of treatment, whatever it entails and wherever that treatment occurs. For the most part, history has placed us in the controlled environment of the OR, where we have defined preprocedural evaluation standards, organized schedules, booking protocols, and standards of behavior and communication. We have grown comfortable there, but times are changing, and the time has come for us to be comfortable with a little discomfort. For many acute and chronic disorders, there are now interventional medical

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procedures available: surgery in the OR via an open approach is no longer the only option.

As the landscape changes, new venues present physical, political, economic, and medical challenges. Anesthesiologists and gastroenterologists do not have a long history of working together in the same way that anesthesiologists and surgeons do, so a well-vetted common practice platform has to be created. Performance of preprocedure evaluations, questions about intraprocedural problems related to location, operators, and procedural process, as well as standardized postoperative disposition of patients can be complex and difficult to resolve. Financial constraints can also limit options for compromise. All of these are important variables for consideration.

3. The anesthesia-medicine culture gap

To tailor the anesthetic for any cases (whether performed inside or outside of the OR, by gastroenterologists or surgeons) and optimize safety, anesthesiologists must understand both the principles of the procedure and the physiology of the patient. Assumption is dangerous; a death knell for efficiency or medical optimization of any kind. There is no substitute for taking time to discuss the procedure and the patient with the medical proceduralist. This is not always an easy undertaking in the GI suite. Most medical providers are in a hurry; they understandably often lack exposure and education about anesthesia and are unfamiliar with the skill sets of anesthesiologists. In spite of rising patient acuity, many still see anesthesiology support as an unnecessary "luxury." They may not consider the negative synergism of moderate sedation and complex procedures for an older, sicker patient population until it becomes an obstacle for accomplishing the procedure at hand. Often, proceduralists take care of open access patients who they do not meet until the last minute. They may be unaware of the unique relevant risks associated with sedation for each patient, lack of airway control, or the inability of nursing staff to manage tenuous hemodynamics in critically ill patients. They may not have the vocabulary or experience to discuss anesthetic options with anesthesiologists and likewise, anesthesiologists may as well not have the vocabulary or expertise to have this discussion with their proceduralist counterparts. Lack of mutual experience and vocabulary, extreme specialization, and unique financial and political motivators may contribute [2]. Mutual goals are difficult to identify in these circumstances; medical interventionalists may find anesthesiologists obstructive, whereas anesthesiologists often find medical proceduralists cavalier or uncommunicative. Many medical proceduralists do not understand the intricacies of administering an anesthetic. Likewise, anesthesiologists may have only a basic idea about what is going on during the course of a GI procedure. Because GI procedures are almost never performed in a typical operating suite, anesthesiologists are sometimes out of their comfort zone, and they may not ask for information or equipment that they are accustomed to. They may feel unsupported when the OR is several floors or several buildings away. Interdisciplinary simulation is often an invaluable tool here. The procedure may be hard to follow and fluoroscopy screens may be out of the field of view or uninterpretable to us. More often than not the proceduralist is unlikely to communicate the course of the procedure during the case. Anesthesiologists may be unaware of pitfalls and likely complications of the intervention, and even though we would never undertake an anesthetic in the OR without understanding the surgery, somehow we do so in non-OR locations without a second thought. Bridging the communication gap requires effort: it is absolutely critical for optimizing outcomes.

Extreme specialization can lead practitioners to overlook general concerns and to concentrate on completing a consult request or expanding on their point of expertise. Sometimes a risky procedure coupled with the need for general anesthesia should prompt reconsideration of the procedural risks or benefits. Anesthesiologists might not be inclined to discuss these issues, but instead feel that it is their job to get the procedure done. A collaborative approach includes a discussion of the indications for the procedure, the attendant risks of anesthesia, and the potential effects on postoperative disposition.

When interventionalists undertake novel procedures with new technology, lack of collaborative process has even more troubling ramifications. The course of the procedure may be unknown, the timing and sequence of events may be unclear, and the focus of the procedure may change midstream. When the proceduralist is unsure of what is going on, the anesthesiologist cannot integrate the information normally required for a tailored anesthetic. Although surgeons realized long ago that they could not effectively perform surgery without the administration of an appropriate anesthetic by another physician, this was not the case for interventional medical proceduralists who performed their cases without incisions. Surgeons are thus accustomed to sharing their procedures with other physicians, whereas medical proceduralists were used to working with a nurse to administer sedation. Increasing technical demands and more complex patients make it likely that medical proceduralists would find increasing benefit from the participation of anesthesiologists. Teamwork requires collaboration and teams cannot function without mutual respect, excellent communication, common vocabulary, shared experience, and overlapping competencies. A reasonable approach is to group medical specialists with specialty and fellowship-trained anesthesiologists who share a mutual knowledge base. Interdisciplinary perspectives can create a synergy, which would drive innovation and promote success outside of the OR.

4. Preprocedural evaluation

Preoperative evaluation is an essential component of anesthesia practice, regardless of where the procedure is performed, or who is performing it. Patients with serious comorbidities and significant compromise are increasingly scheduled to undergo procedures outside of the OR, because they are deemed "too sick for the OR." Even a seemingly "minor procedure" can become a disaster in an unstable patient. The American Society of Anesthesiologists (ASAs) Guidelines for preanesthesia evaluation [3] indicate that a preanesthesia visit should include the following (at a minimum):

(1) A patient interview that includes a physical examination and a review of medical, surgical, anesthetic, and medication history.
(2) Diagnostic laboratory tests and other relevant diagnostic information.
(3) Assessment of ASAs status.
(4) Formulation of potential anesthetic plans and presentation of these to patient.

As many non-OR procedures are scheduled for patients who have not been seen by the interventionalist, gathering the information can be challenging, and sharing or discussing the information can prove even more difficult, particularly if problems are encountered. If the patients have numerous serious comorbidities, it may be more reasonable to send them to the preoperative evaluation clinic if one is available. If not, then information gathering is required, and the proceduralist risks cancellation on the day of the procedure. Occasionally, periprocedural admission or consultation with a specialty service is required. Interventional medical areas may not have personnel available to perform