

Clinical Practice Guideline for Ambulatory Anorectal Surgery

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Prepared by the Clinical Practice Guidelines Committee of the American Society of Colon and Rectal Surgeons

KEY WORDS: Ambulatory surgical procedures, standards; Anal canal, surgery; Perioperative care, standards; Rectum, surgery; Practice guidelines.

The American Society of Colon and Rectal Surgeons is dedicated to ensuring high-quality patient care by advancing the science, prevention, and management of disorders and diseases of the colon, rectum, and anus. This Clinical Practice Guidelines Committee is charged with leading international efforts in defining quality care for conditions related to the colon, rectum, and anus by developing Clinical Practice Guidelines based on the best available evidence. These guidelines are inclusive, not prescriptive, and are intended for the use of all practitioners, health care workers, and patients who desire information about the management of the conditions addressed by the topics covered in these guidelines. Their purpose is to provide information on which decisions can be made, rather than dictate a specific form of treatment.

It should be recognized that these guidelines should not be deemed inclusive of all proper methods of care or exclusive of methods of care reasonably directed to obtaining the same results. The ultimate judgment regarding the propriety of any specific procedure must be made by the physician in light of all the circumstances presented by the individual patient.

METHODOLOGY

These guidelines are built on the last set of the American Society of Colon and Rectal Surgeons Practice Parameters for Ambulatory Anorectal Surgery published in 2003.¹ An organized search of Medline and the Cochrane Library was performed. Key words used included “anorectal or rectal or rectum or anal or anus or colorectal or proctolog* or hemorrhoid* or haemorrhoid* or ano or ani or proctitis or proctocolitis or rectocele” (204,970 results) and “ambulatory

or outpatient* or office or surgicenter*” (210,904 results). The combined search results were limited to English language, human only, and then further limited by study type for potential inclusion in the evidence-based review by using the limits of case reports, clinical trial, comparative study, controlled clinical trial, journal article, meta-analysis, multicenter study, observational study, randomized controlled trial, or systematic reviews. The Medline results were from 1959 to December 2014. The Cochrane results were from 1995 to December 2014. This left 554 results from the Medline search and 166 results from the Cochrane search. The titles were reviewed for appropriateness, and 304 studies were selected for abstract review. A second key word search was done for combinations including “ambulatory surgical procedure” (97 results), “anesthesia” (74 results), “anorectal surgery” (83 results), “urinary retention” (5 results), “diagnostic test routine” (4 results), “venous thromboembolism” (4 results), and “postoperative pain” (17 results). Titles and abstracts were selected and articles were reviewed. Initial groupings of studies were made to create potential recommendations. A directed search of the embedded references and citing articles from key primary studies supporting each recommendation included in the parameter was performed. Existing guidelines on this topic and their associated references and citing articles were reviewed for any additional studies which may not have been included. The final source material used was evaluated for the methodological quality, evidence base was examined, and a treatment guideline was formulated. The final grade of recommendation was performed by using the Grades of Recommendation, Assessment, Development, and Evaluation (GRADE) system² (Table 1).

STATEMENT OF THE PROBLEM

Ambulatory surgery has been defined as any surgical procedure performed on the same day a patient presents to and is released from a facility.^{3,4} It encompasses those surgical procedures that need to be performed for safety reasons in an operating room on anesthetized patients. Ambulatory surgery services may be provided in a free-

Dis Colon Rectum 2015; 58: 915–922
DOI: 10.1097/DCR.0000000000000451
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TABLE 1. The GRADE system-grading recommendations

	Description	Benefit vs risk and burdens	Methodological quality of supporting evidence	Implications
1A	Strong recommendation, High-quality evidence	Benefits clearly outweigh risk and burdens or vice versa	RCTs without important limitations or overwhelming evidence from observational studies	Strong recommendation, can apply to most patients in most circumstances without reservation
1B	Strong recommendation, Moderate-quality evidence	Benefits clearly outweigh risk and burdens or vice versa	RCTs with important limitations (inconsistent results, methodological flaws, indirect or imprecise) or exceptionally strong evidence from observational studies	Strong recommendation, can apply to most patients in most circumstances without reservation
1C	Strong recommendation, Low- or very-low-quality evidence	Benefits clearly outweigh risk and burdens or vice versa	Observational studies or case series	Strong recommendation but may change when higher-quality evidence becomes available
2A	Weak recommendation, High-quality evidence	Benefits closely balanced with risks and burdens	RCTs without important limitations or overwhelming evidence from observational studies	Weak recommendation, best action may differ depending on circumstances or patients' or societal values
2B	Weak recommendations, Moderate-quality evidence	Benefits closely balanced with risks and burdens	RCTs with important limitations (inconsistent results, methodological flaws, indirect or imprecise) or exceptionally strong evidence from observational studies	Weak recommendation, best action may differ depending on circumstances or patients' or societal values
2C	Weak recommendation, Low- or very-low-quality evidence	Uncertainty in the estimates of benefits, risks, and burden; benefits, risk, and burden may be closely balanced	Observational studies or case series	Very weak recommendations; other alternatives may be equally reasonable

GRADE = Grades of Recommendation, Assessment, Development, and Evaluation; RCT = randomized controlled trial.

Adapted from: Guyatt G, Guterma D, Baumann MH, et al. Grading strength of recommendations and quality of evidence in clinical guidelines: report from an American College of Chest Physicians Task Force. *Chest* 2006;129:174–181.² Used with permission.

standing ambulatory surgery center or a hospital-based ambulatory surgery center either on site or off site.^{3,4} The potential benefits for the patient include more rapid return to the comforts of a home environment, diminished opportunities for nosocomial complications, and reduced disruption of work and home life.⁵ From a system standpoint, benefits include diminished cost and freeing up resources for other major procedures.^{6,7}

It is estimated that 90% of anorectal cases are suitable for ambulatory surgery.^{5,7,8} These procedures are considered low-risk surgery, and patients can expect to be discharged home safely and comfortably the same day.^{9,10} However, the surgeon must consider the expectations of the individual patient, comfort level, and potentially complicating comorbidities or other extenuating circumstances before deciding on an ambulatory setting.^{6,11}

RECOMMENDATIONS

- 1. Anorectal surgery may be safely and cost-effectively performed in an ambulatory surgery center. Grade of Recommendation: Strong recommendation based on moderate-quality evidence, 1B.**

Ambulatory surgery may be considered in most patients whenever anorectal procedures are contemplated.⁶ A wide

variety of anorectal conditions including condyloma, fissure, abscess, fistula, hemorrhoids, pilonidal disease, and some tumors are amenable to ambulatory surgery.^{12,13} Admission rates of 0.5% to 17%^{14–16} and low perioperative morbidity and mortality^{5,9,17} have been reported among studies reporting ambulatory anorectal surgery outcomes. These procedures have been found to be safe and efficacious with reductions in hospital charges of 25% to 50%.^{6,7,17} A 92.4% patient satisfaction with the ambulatory anorectal surgery experience has been recently reported.¹² This is comparable to the 97.5% patient satisfaction previously reported for an array of multispecialty ambulatory surgical procedures.¹⁸

- 2. Preoperative risk assessment should be made to determine who is a candidate for ambulatory surgery. Grade of Recommendation: Strong recommendation based on moderate-quality evidence, 1B.**

The ASA physical status (ASA PS) classification allows quantification of the amount of physiological reserve that a patient possesses.¹⁹ This classification should not be used as a sole predictor of operative risk to the patient, but should be used in conjunction with other factors, such as the magnitude of the proposed surgery, which impart risk independently of the ASA PS.¹⁹ Moderate-sized observational studies and randomized

clinical trials of ambulatory anorectal surgery cases have demonstrated safety and efficacy for ASA PS 1 and 2 patients.^{20–23} Selected ASA PS 3 patients may also be appropriate candidates for ambulatory anorectal surgery.¹¹ However, the data are inadequate to allow risk stratification for consistent patient selection within the ASA PS 3 group.²⁴ In a retrospective review of ambulatory surgery with monitored anesthesia care, ASA PS 3 patients were less likely to fast-track in comparison with ASA PS 1 patients.²⁵ Hyman and coworkers²⁶ in 2008 reviewed their prospective database of 969 anorectal procedures and found that postoperative complications were infrequent, were typically minor, and occurred after hospital discharge. Major complications reflected concomitant illness, not surgical quality.

Multiple additional factors must be considered when assessing patients for surgery in the ambulatory setting.¹⁹ The complexity of the proposed surgery, the type of anesthesia, the availability of appropriate instrumentation and expertise, the presence of a difficult airway, genetic problems such as malignant hyperthermia and succinylcholine apnea, the ability of the patient to follow instructions, the distance of the home from the surgical center, and patient support structure may influence the selection for ambulatory anorectal surgery.^{19,27} Unfortunately, some of these variables are interdependent and not quantifiable. Complex medical and social situations must be assessed on a case-by-case basis for possible ambulatory surgery selection as part of the routine evaluation of patients undergoing elective surgery.²⁸

3. Preoperative investigations should be dictated by the history and physical examination. Grade of Recommendation: Strong recommendation based on moderate-quality evidence, 1B.

A recent systematic review of the clinical and cost-effective literature concluded there was no indication for the universal application of preoperative tests for all surgical patients.²⁹ Preoperative testing should be based on the results of a careful history and physical examination and ordered when there is reason to suspect an underlying clinical condition that may require preoperative clinical management. With this selective approach, outcomes are not adversely affected and are possibly even improved.^{30,31} Nonselective preoperative screening yields very few abnormal results and even fewer that are clinically significant.³² Excessive testing increases the risk of finding spuriously abnormal results that require additional tests at significant additional cost and inconvenience. There is no evidence to support routine preoperative hemograms, biochemistry, chest x-ray, electrocardiogram, urinalysis, or coagulation profiles unless there are preexisting abnormalities or there is a suspicion of disease based on preoperative history and physical examination.^{31–41} This strategy results in substantial resource savings.²⁹

4. Venous thromboembolic (VTE) prophylaxis may be considered in ambulatory anorectal surgery based on the specific procedure, the potential for bleeding, and the risk stratification of the patient. Grade of Recommendation: Weak recommendation based on low-quality evidence, 2C.

VTE is a common cause of preventable death in surgical patients.⁴² A prospective observational cohort study using the American College of Surgeons National Surgical Quality Improvement Program database evaluated adult patients who had outpatient surgery or surgery with subsequent 23-hour observation.⁴³ The main outcome measure was 30-day VTE requiring treatment. The 30-day incidence of VTE for the overall cohort was 0.15%. Independent risk factors included current pregnancy, active cancer, age greater than 41 years, BMI greater than 40 kg/m², operative time 120 minutes or more, arthroscopic surgery, saphenofemoral junction surgery, and venous surgery not involving the greater saphenous vein. The weighted risk index identified a 20-fold variation in 30-day VTE between low-risk (0.06%) and highest-risk (1.18%) patients.⁴³ An updated systematic review of the literature by the American College of Chest Physicians recently described recommendations for thromboprophylaxis in patients undergoing general and abdominal-pelvic surgery including GI, gynecological, and urological surgery.⁴² The authors concluded that optimal thromboprophylaxis in patients undergoing nonorthopedic surgery should consider the risks of VTE and bleeding complications, as well as the values and preferences of individual patients.⁴² Squizzato et al⁴⁴ in 2010 investigated the risk/benefit for thromboprophylaxis associated with ambulatory surgery. No high-quality evidence was found supporting the use of pharmacological thromboprophylaxis with traditional antithrombotic drugs in patients undergoing ambulatory surgery without additional VTE risk factors who were stratified at low risk of VTE. The lack of studies hampers definite conclusions on the effects on cost and safety outcomes, which mandates additional studies to further determine the risk-to-benefit ratio of thromboprophylaxis methods in the ambulatory surgery setting.⁴⁵

5. Ambulatory anorectal surgery may be safely and cost-effectively performed under local anesthesia with or without intravenous sedation, regional anesthesia, or general anesthesia depending on patient or physician preference. Grade of Recommendation: Strong recommendation based on moderate-quality evidence, 1B.

Perianal infiltration of local anesthetics is a simple procedure that is easily performed.^{20,46–48} The use of locally infiltrated anesthetics along with intravenous sedation for anorectal surgery may be safer and have fewer complications than other anesthetic techniques.^{48–52} In 2000, Li and coworkers⁷ compared the costs and recovery profiles of 3

anesthetic techniques for ambulatory anorectal surgery. This randomized clinical trial of 93 patients compared local infiltration of a mixture of 15 mL of 2% lidocaine and 15 mL of bupivacaine 0.5% with epinephrine (1:200,000) in combination with propofol intravenous sedation, spinal anesthesia, and general anesthesia. Local plus intravenous sedation was found to be the most cost-effective technique for anorectal surgery in the ambulatory setting with savings of 30% to 50% compared with the 2 other anesthesia techniques.^{7,48,53} Safety across anesthetic techniques was maintained with no significant difference among the 3 groups with respect to the postoperative side effects or unanticipated hospitalizations.⁷ Anesthesia time, times to oral intake, and home readiness were significantly shorter; the need for pain medication and the incidence of nausea were less with local plus intravenous sedation compared with general anesthesia.⁷ More patients undergoing ambulatory anorectal surgery were highly satisfied with the care they received and were more likely to discharge home within 6 hours of surgery when receiving local infiltration and propofol intravenous anesthesia.^{7,54}

The safety of day case hemorrhoidectomy has been favorably compared with its inpatient counterpart.⁶ Studies have identified comparable perioperative morbidity, no mortality, and unplanned readmission rates of 6% for day surgery and 11% for inpatient anorectal surgery procedures.^{5,6,9,55} Major causes of morbidity for ambulatory anorectal procedures include pain, bleeding, and urinary retention.^{5,56} Postoperative nausea and vomiting have also been related to delayed discharge from the ambulatory facility and represent a significant source of morbidity. The use of preoperative intravenous corticosteroids has helped to decrease the incidence of postoperative pain as well as postoperative nausea and vomiting and has also facilitated discharge after ambulatory anorectal surgery with general anesthesia.^{57,58}

An additional consideration is the position of the patient.⁵⁹ Although many anorectal procedures are best performed in specific positions, patient factors and anesthetic issues must be considered before performing the surgery. In some cases, a compromise is necessary to ensure maximal safety and efficacy at the expense of maximum efficiency. Although intravenous sedation plus local anesthesia in the prone position is safe and effective for anorectal surgery, it may not be optimal in the morbidly obese, women in late pregnancy, or patients with pulmonary compromise.^{53,59–62} Although there are a number of potential anesthetic options for ambulatory anorectal surgical procedures, the surgeon should pick the option that provides maximal safety, efficacy, and efficiency for the individual patient.^{46,48,52,53,61–63}

6. Patients undergoing ambulatory anorectal surgery may be safely discharged home following postanesthesia care. Grade of recommendation: Strong recommendation based on moderate-quality evidence, 1B.

Ensuring rapid postoperative recovery and safe discharge after ambulatory surgery are important components of an ambulatory surgery program. A clearly defined process should be established for each ambulatory surgery unit to ensure the safe and timely discharge of patients after anesthesia in accordance with current best evidence. Systematic reviews of the literature have assessed postoperative recovery outcome measurements after ambulatory surgery. The current literature supports discharge scoring systems as a useful guide for discharge following ambulatory surgery.^{64,65}

The time course for recovery from anesthesia includes early recovery, intermediate recovery, and late recovery.^{62,66,67} Early recovery (phase 1) is the time interval following discontinuation of anesthesia until the recovery of protective reflexes and motor activity take place. Intermediate recovery (phase 2) is the period during which coordination and physiology normalize to an extent that the patient can be discharged in a state of home readiness and be able to return home under the care of a responsible adult (phase 3).⁶⁸ The Aldrete Score⁶⁹ was initially developed in 1970 to help determine adequate and consistent release from phase 1 (early) recovery to a hospital bed or phase 2 (intermediate) recovery. This system assigns a score of 0, 1, or 2 for parameters including activity, respiration, circulation, consciousness, and color, giving a maximal score of 10. A score of 9 indicates recovery sufficient for the patient to be transferred from the postanesthetic care unit. With the advent of pulse oximetry, the Modified Aldrete Score was developed in 1995 with the parameter of oxygen saturation replacing the subjective parameter of color to help increase the objectivity of discharge from the postanesthetic care unit.⁷⁰ Assessment tools such as the PostAnesthetic Discharge Scoring System have also been shown to be efficacious for discharge home from intermediate or phase 2 recovery. The PostAnesthetic Discharge Scoring System encompasses parameters of vital signs, activity level, nausea and vomiting, and surgical bleeding. The maximal score is 10, and patients scoring more than 9 are generally considered fit for discharge.^{69,71–75}

7. Adequate pain control after ambulatory anorectal surgery may require multiple modalities. Grade of Recommendation: Strong recommendation based on moderate-quality evidence, 1B.

Pain remains the most common reason for delaying discharge after ambulatory surgery.⁷⁶ Good analgesia can help to restore function and quality of life and expedites recovery following anorectal surgery.^{12,77} Studies have shown that local infiltration with conventional anesthetics results in effective postsurgical pain management after anorectal surgery by lowering pain scores and reducing the consumption of analgesic medication. The duration of standard local analgesia is generally limited to 8 hours.^{18,20,56,78–83} The use of catheter delivery systems for

continuous postoperative administration of local anesthetics has been limited by the cost of the equipment, difficulty in maintaining correct catheter position, and the resources needed to manage their use in the outpatient setting.⁸⁴ A recent randomized clinical trial using local infiltration with a longer-acting liposomal bupivacaine (LB) showed significantly reduced postsurgical pain compared with bupivacaine HCl in patients for up to 96 hours after hemorrhoidectomy. Mean total postoperative opioid consumption was lower for the LB group compared with the bupivacaine HCl group for the first 3 postoperative days. Median time to first opioid use and the incidence of opioid-related adverse events were also lower in the LB group compared with the bupivacaine HCl group.⁸⁵

Patients undergoing anorectal surgery may also receive ketorolac perioperatively. Concomitant use of nonsteroidal anti-inflammatory drugs has shown improved analgesia, lower narcotic usage, and lower rates of urinary retention.^{86–90} Oral narcotics can also be used as part of a multimodality approach to postoperative pain but should be minimized, if possible, because they can potentiate constipation, which is generally to be avoided after any anorectal surgery.⁹¹ Oral metronidazole has shown improved postoperative pain control after hemorrhoidectomy in a small randomized clinical trial,⁹² although a more recent retrospective matched-paired control study showed no benefit of metronidazole on closed hemorrhoidectomy with respect to postoperative complications, length of hospital stay, and total analgesics used.⁹³ In addition, antibiotic prophylaxis has not been shown to reduce the incidence of postoperative surgical site infection after hemorrhoidectomy, which is a rare event, and its routine use appears unnecessary.^{94,95} Topical anesthetic creams may also help to decrease pain intensity and narcotic requests, reduce the frequency of urinary catheterizations, and improve patient satisfaction with postoperative pain management after hemorrhoidectomy.⁹⁶

A recent meta-analysis of randomized controlled trials investigated the role of glyceryl-tri-nitrate (GTN) after hemorrhoidectomy as an analgesic, its role in wound healing, and the unwanted incidence of headache. A total of 333 patients were included from 5 identified randomized clinical trials. GTN ointment was found to reduce pain after hemorrhoidectomy on postoperative days 3 and 7 compared with the placebo group, but not on day 1. Wound healing after GTN treatment at 3 weeks was reported to be better than the placebo group, and the side effect of headache was not found to be statistically significant.⁹⁷ A small trial with 20 randomly selected patients included in this meta-analysis failed to find a difference in pain after hemorrhoidectomy with GTN use and reported a 20% incidence of headache with the use of both GTN and placebo.⁹⁸ The possibility that the incidence of headache with GTN use after hemorrhoidectomy may be of clinical significance needs to be considered.

A recent systematic review addressing the management of pain after hemorrhoidectomy between 1966 and 2006 identified 65 randomized studies that met the inclusion criteria. Quantitative analyses were not performed in view of the limited number of trials with a homogeneous design. The authors concluded that local anesthetic infiltration, as the only modality or as an adjunct to general or regional anesthesia, and combinations of analgesics including nonsteroidal anti-inflammatory drugs, acetaminophen, and opiates were recommended.⁹⁹

8. Urinary retention after ambulatory anorectal surgery may be reduced by limiting perioperative fluid intake. Grade of Recommendation: Strong recommendation based on moderate-quality evidence, 1B.

Multiple studies including a randomized clinical trial have shown that limiting perioperative fluid lowers the incidence of postoperative urinary retention following ambulatory anorectal surgery.^{100,101} Perioperative fluid restriction to less than 1 liter has been shown to decrease the incidence of urinary retention from 17% to 8% following anorectal surgery for benign disease.¹⁰¹ Prophylactic analgesic treatment also significantly decreases the incidence of urinary retention (7.9% vs 25.6%).¹⁰¹ There is conflicting evidence regarding the relationship between sex, age, quantity of narcotic medication used, the various forms of anesthesia, especially spinal anesthesia, and the occurrence of postoperative urinary retention.^{101–103} However, hemorrhoidectomy, especially multiple quadrants, and the performance of multiple concomitant anorectal procedures have demonstrated consistently higher rates of urinary retention.^{104–106}

9. Postoperative education for ambulatory anorectal surgery should include effective, reproducible, and comprehensible instructions, orders, and follow-up. Grade of Recommendation: Strong recommendation based on low-quality evidence, 1C.

A common reason for dissatisfaction after ambulatory surgery has been related to inadequate communication between the patient and the medical/nursing staff.¹⁸ Patients undergoing ambulatory surgery are in the clinical setting for shorter periods and therefore require effective educational tools that will assist them in optimizing surgical outcomes. Improved perioperative and discharge orders may result from the use of standardized forms that can improve turnover time, provide nurses and patients with orders that are easier to read, and produce fewer incidences in which information is left off orders or misunderstood.¹⁰⁷ Classic teachings recommend the use of sitz baths or mild lavage with hand-held shower heads, squirt bottles or bidets, and bulk-forming laxatives following ambulatory anorectal surgery, although the evidence for the use of these measures is empiric.⁹¹ Improved success

of fast-track programs after ambulatory surgery has also been related to education and personnel feedback programs for physicians and nurses.²⁵ Following up with patients to ensure comprehension and active participation in their postsurgical care may also optimize the success of surgical care and patient satisfaction.⁵⁶

APPENDIX A

Contributing Members of the ASCRS Clinical Practice Guideline Committee

Janice Rafferty, Chair; Scott R. Steele, Co-chair; W. Donald Buie, Advisor; Patricia L. Roberts, Council Representative; Joseph Carmichael; George Chang; Emily Finlayson; William J. Harb; Samantha Hendren; Daniel O. Herzig; Jennifer Irani; James McCormick; Ian Paquette; Scott A. Strong; Madhulika Varma; Martin Weiser; Kirsten Wilkins.

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