

Practice Parameters for the Management of Hemorrhoids (Revised 2010)

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The American Society of Colon and Rectal Surgeons is dedicated to assuring high-quality patient care by advancing the science, prevention, and management of disorders and diseases of the colon, rectum, and anus. The Standards Committee is composed of Society members who are chosen because they have demonstrated expertise in the specialty of colon and rectal surgery. This Committee was created to lead international efforts in defining quality care for conditions related to the colon, rectum, and anus. This is accompanied by developing Clinical Practice Guidelines based on the best available evidence. These guidelines are inclusive, and not prescriptive. Their purpose is to provide information on which decisions can be made, rather than dictate a specific form of treatment. These guidelines 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. 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 of the circumstances presented by the individual patient.

Statement of the Problem

With more than 10 million patients experiencing hemorrhoidal symptoms, hemorrhoids represent one of the most common medical and surgical disease processes encountered in the United States. It is estimated that more than 50% of the population over 50 years of age have experienced hemorrhoid problems.¹ Unfortunately, many anorectal conditions are inappropriately attributed to hemorrhoids; therefore, it is of

paramount importance for all those treating patients with hemorrhoids to have a clear understanding of the evaluation and management of this disease process. These guidelines address both the diagnostic and therapeutic modalities in the management of hemorrhoidal disease.

Methodology

These guidelines are built on the last set of the American Society of Colon and Rectal Surgeons (ASCRS) Practice Parameters for the management of hemorrhoids published in 2005.² A literature search of MEDLINE, PubMed, and the Cochrane Database of Collected Reviews was performed through April 2010. Key word combinations included hemorrhoid, internal and external hemorrhoids, hemorrhoid disease, thrombosed hemorrhoid, rubber band ligation, hemorrhoidopexy, hemorrhoidectomy, PPH, Milligan-Morgan, Ferguson, Doppler guided, and stapled hemorrhoidopexy. Directed searches of the embedded references from the primary articles were also performed in selected circumstances. The final grade of recommendation and level of evidence for each statement was determined by the use of the Grades of Recommendation, Assessment, Development, and Evaluation (GRADE) system.³

Recommendations

1. The evaluation of patients with hemorrhoids should include a directed history and physical examination. Grade of Recommendation: Strong recommendation based on low-quality evidence 1C

The diagnosis of hemorrhoids is almost always a clinical one. The initial assessment should include a thorough targeted history and physical examination, with focus on the extent, severity, and duration of symptoms, such as bleeding, prolapse, issues of hygiene and pain, and fiber and fluid intake, as well. In addition, a careful review of bowel habits including frequency, consistency, and ease of evacuation should be performed. All patients with rectal bleeding require a detailed family history with particular emphasis on intestinal disease. The presence of malignant conditions should be evaluated to assess for sporadic or

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TABLE 1. Classification of internal hemorrhoids

| Grade | Physical findings |
|-------|--|
| I | Prominent hemorrhoidal vessels, no prolapse |
| II | Prolapse with Valsalva and spontaneous reduction |
| III | Prolapse with Valsalva requires manual reduction |
| IV | Chronically prolapsed manual reduction ineffective |

hereditary colon and rectal cancer, and thus for the need for extended colonic evaluation.⁴

The physical examination should typically include visual inspection of the anus, digital examination, and anoscopy and/or proctoscopy looking for evidence of thrombosis or concomitant anorectal pathology, such as fissure, fistula, abscess, or evidence of Crohn's disease.⁵ Internal hemorrhoids, located above the dentate line, can be assigned a grade based on the definitions in Table 1, which will help to guide therapy. Laboratory evaluation is not typically required.

2. Complete endoscopic evaluation of the colon is indicated in select patients with hemorrhoids and rectal bleeding. Grade of Recommendation: Strong recommendation based on moderate-quality evidence 1B

Although commonly associated with hemorrhoids, complaints of rectal bleeding may be a symptom of other disease processes, such as colorectal cancer, inflammatory bowel disease, other colitides, diverticular disease, and angiodysplasia.⁶ A thorough personal history, a detailed family history, and a physical examination, which may include proctoscopy and/or flexible sigmoidoscopy, will identify high-risk patients requiring more extensive evaluation. Those who fulfill the select criteria should have a full colonic evaluation with colonoscopy. Patients unable to undergo colonoscopic evaluation may be considered for flexible sigmoidoscopy combined with barium enema or other diagnostic modalities per consensus guidelines.⁷

3. Dietary modification consisting of adequate fluid and fiber intake is the primary first-line nonoperative therapy for patients with symptomatic hemorrhoid disease. Strong recommendation based on moderate-quality evidence 1B

Constipation and altered bowel habits can play a significant role in many patients with symptomatic hemorrhoids. Whereas more aggressive office-based or operative treatment is usually required for advanced hemorrhoidal disease (grades III to IV or those with significant external components), increased fiber and fluid intake has been shown to improve symptoms of mild to moderate prolapse and bleeding. A Cochrane review of 7 randomized studies including 378 patients demonstrated a benefit in both the reduction of symptomatic prolapse (RR = 0.53, 95% CI 0.38–0.73) and bleeding (RR = 0.50, 95% CI 0.28–0.89) in patients with increased fiber intake.^{8–11} Patients should also be counseled as to maintaining proper bowel habits, such as the avoidance of straining and limiting prolonged

time on the commode, because this has been associated with higher rates of symptomatic hemorrhoids.¹²

4. Most patients with grade I, II, and III hemorrhoid disease in whom medical treatment fails may be effectively treated with office-based procedures, such as banding, sclerotherapy and infrared coagulation. Hemorrhoid banding is typically the most effective option. Grade of Recommendation: Strong recommendation based on moderate-quality evidence 1B

The goals of all office-based procedures are 3-fold: to decrease vascularity, reduce redundant tissue, and increase hemorrhoidal fixation to the rectal wall to minimize prolapse. These procedures are all relatively well tolerated, causing minimal pain and discomfort. However, patients should understand they all have a variable recurrence rate and may require repeated applications.^{13–15}

Rubber Band Ligation. Rubber band ligation is a commonly used and effective way of treating symptomatic internal hemorrhoids. In a meta-analysis of 18 randomized prospective studies, rubber band ligation was superior to injection sclerotherapy and infrared coagulation in the treatment of grades I, II, and III hemorrhoids in terms of the need for repeated treatments. However, the risk of complications, albeit small, and pain tended to be greater for rubber band ligation in comparison with the other modalities.¹³ Rubber band ligation has also been directly compared with excisional hemorrhoidectomy for grade III hemorrhoids. A systematic review of randomized controlled trials found that, overall, it was less effective and more likely to require multiple procedures than surgical excision. However, rubber band ligation was associated with less pain and fewer complications than the operative approach.¹⁶ A recent Cochrane review by the same group reported that band ligation may be the preferred choice for grade II hemorrhoids, and even considered for first-line therapy in grade III hemorrhoids, whereas surgical excision may be more appropriately reserved for grade III or rubber band treatment failures.¹⁷

Banding is commonly performed with either a suction apparatus or a forceps ligator. In direct comparison, suction ligation of second- and third-degree hemorrhoids was noted to be beneficial in comparison with forceps ligation in terms of pain tolerance, use of analgesics, and intraprocedural bleeding.¹⁸ However, both methods are acceptable, because, in general, banding is very well tolerated. The most common complications are postband anorectal pain, rectal bleeding, thrombosed external hemorrhoids, and vasovagal symptoms, which have been reported in <1% to 3% of patients.^{19,20} A careful and detailed history should be specifically obtained from the patient in regard to the presence of coagulation disorders, either intrinsic, such as those with thrombocytopenia, or acquired, as seen with antiplatelet therapy (Plavix), or anticoagulated with warfarin (Coumadin) or heparin products. In general, the

performance of a banding procedure is contraindicated in this group because the exceedingly high incidence of post-procedure bleeding.

Sclerotherapy. Sclerotherapy involves injection of 3 to 5 mL of a sclerosant into the apex of an internal hemorrhoid. This relatively simple procedure may be used for small, bleeding internal hemorrhoids with success rates reported in 75% to 89% of patients with grades I to III disease.^{21,22} Unfortunately, longer follow-up intervals often demonstrate a relatively higher rate of symptomatic recurrence.^{23–27} This approach may be particularly appealing in those with bleeding tendencies, such as the patient receiving antiplatelet or anticoagulation therapy. Complications are uncommon; the most frequent one is minor discomfort or bleeding with injection. Rare, serious complications have resulted from erroneous injection site placement or systemic effects of the solution itself, including the creation of rectourethral fistulas, rectal perforations, and necrotizing fasciitis.^{24,28–33} These complications have been described in isolation or in conjunction with the simultaneous application of rubber bands.^{24,27}

Infrared Coagulation. Infrared coagulation involves the direct application of infrared waves that results in protein necrosis within the hemorrhoid. This is most commonly used for grade I and II hemorrhoids. Although previous reports have demonstrated high rates of recurrence, especially with grades III and IV,³⁴ recent randomized studies have demonstrated outcomes similar to rubber band ligation.^{35,36}

Complications. Overall, the incidence of major complications is rare; yet, one must remember that perianal sepsis has been described as a life-threatening complication with all office-based procedures. The onset of urinary retention and fever immediately after an office-based procedure may be the initial sign of perianal sepsis and mandates emergent patient evaluation. As such, patients should be counseled regarding these rare but devastating complications with all office-based hemorrhoid procedures, and patients should be counseled appropriately.^{32,37,38}

5. Most patients with thrombosed external hemorrhoids benefit from surgical excision within 72 hours of the onset of symptoms. Grade of Recommendation: Strong recommendation based on low-quality evidence 1C

Although most patients treated conservatively will experience eventual resolution of their symptoms, excision of thrombosed external hemorrhoids results in more rapid symptom resolution, lower incidence of recurrence, and longer remission intervals.^{39,40} Most excisions can be safely performed in the office setting, although extensive large thrombosed hemorrhoids and those extending into the anal canal may require a more formal surgical

approach in the operating room. One should avoid lancing techniques with simple incision and drainage, because they tend to result in higher rates of reaccumulation and may worsen symptoms with further expansion of the thrombosis.

6. Surgical hemorrhoidectomy should be reserved for patients who are refractory to office procedures, who are unable to tolerate office procedures, who have large external hemorrhoids, or who have combined internal and external hemorrhoids with significant prolapse (grades III to IV). Grade of Recommendation: Strong recommendation based on moderate-quality evidence 1B

Surgical Excision. Surgical excision of hemorrhoids remains a very effective approach. In general, it should be reserved for patients for whom office-based procedures fail or who cannot tolerate these procedures, grade III or IV hemorrhoids, or patients with substantial external skin tags. In a meta-analysis of 18 randomized prospective studies comparing hemorrhoidectomy with office-based procedures, hemorrhoidectomy was the most effective treatment for patients with grade III hemorrhoids. However, it was associated with increased pain and the highest complication rate.¹³

Either open or closed hemorrhoidectomy can be performed with a variety of surgical devices including surgical scalpel, scissors, monopolar cauterization, bipolar energy, and ultrasonic devices.^{41–43} In general, there appears to be no definitive advantage of one over the other.^{44,45} As such, individual patient factors and preferences need to be carefully weighed and considered before a decision for operative therapy. In a recent meta-analysis of 12 studies with 1142 patients, the use of a bipolar energy device was found to be faster and to provide less postoperative pain in comparison with conventional hemorrhoidectomy.⁴⁶ Additional studies particularly addressing increased cost during surgery are needed to further define the relative place of each of these modalities for operative intervention.

Hemorrhoidopexy. Stapled hemorrhoidopexy uses a circular stapling device that resects internal hemorrhoids and fixes the remaining tissues in place. Although effective for internal prolapsing disease, it may not adequately address external hemorrhoids. A recent meta-analysis comparing stapled hemorrhoidopexy with conventional excisional hemorrhoidectomy demonstrated a higher long-term recurrence rate in patients undergoing stapled hemorrhoidopexy.⁴⁷

Early cohort and smaller nonrandomized trials reported stapled hemorrhoidopexy to be associated with less pain and faster recovery in comparison with conventional hemorrhoidectomy. An early meta-analysis including 1077 patients came to similar conclusions.⁴⁷ However, a more recent Cochrane review of 6 randomized trials with

628 patients all having follow-up greater than one year demonstrated no significant differences between stapled hemorrhoidopexy and conventional hemorrhoidectomy in terms of pain, pruritus, and urgency, with higher long-term recurrences following the stapled technique.⁴⁸ Although stapled hemorrhoidopexy is associated with several unique complications (ie, rectovaginal fistula, staple line bleeding), overall complication rates are similar to conventional excisional hemorrhoidectomy. A meta-analysis of almost 2000 patients found the complication rates to be 20.2% for stapled hemorrhoidopexy vs 25.2% for conventional hemorrhoidectomy ($P = .06$).⁴⁹ In general, the stapled procedure is not effective for large external or thrombosed hemorrhoids, although limited data have demonstrated some success.⁵⁰

Doppler-Guided Hemorrhoidectomy. Doppler-guided/assisted hemorrhoidal ligation is a procedure that uses an anoscope fashioned with a Doppler probe for identification of each hemorrhoid arterial blood supply that is subsequently ligated. A potential benefit is the lack of tissue excised and possibly less pain. Prospective studies using Doppler-guided/assisted hemorrhoidal ligation demonstrated favorable results with reported control of bleeding in more than 90% of patients, with recurrence occurring in 10% to 15%.^{51–53} Similarly, a recent systematic review including 17 series with 1996 patients reported an overall recurrence rate of 9% for prolapse, 8% for bleeding, and 5% for pain at defecation. For those with a minimum of 1-year follow-up, the recurrence rate was 11% for prolapse, 10% for bleeding, and 9% for pain at defecation. The authors found recurrences were higher for grade IV hemorrhoids and recommended this for use in grade II and III disease.⁵⁴ Currently, larger studies including variations of the Doppler technique and comparisons with other methods with longer follow-up intervals are required before definitive recommendations on this method.^{55,56}

APPENDIX A: CONTRIBUTING MEMBERS OF THE ASCRS STANDARDS COMMITTEE

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