PRACTICE PARAMETERS

Practice Parameters for the Management of Anal Fissures (3rd Revision)

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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. 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 to 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 toward 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.

Statement of the Problem

An anal fissure is an oval, ulcer-like, longitudinal tear in the anal canal, distal to the dentate line. In almost 90% of cases, fissures are identified in the posterior midline, but can be seen in the anterior midline in up to 25% of affected women and 8% of affected men. Fissures occurring in lateral positions should raise suspicions for other disease processes, such as Crohn's disease, tuberculosis, syphilis, HIV/AIDS, dermatologic conditions (psoriasis), or anal carcinoma. Early or acute fissures have the appearance of a simple tear in the anoderm, whereas chronic fissures, defined by symptoms lasting more than 8 to 12 weeks, are further characterized by edema and fibrosis. Typical inflammatory manifestations of chronic fissures include a sentinel skin tag at the distal fissure margin and a hypertrophied anal papilla proximal to the fissure in the anal canal. In addition, fibers of the internal anal sphincter are often visible at the fissure base. The clinical hallmark of an anal fissure is pain during, and particularly after, defecation. Often there is a history of a tearing sensation during passage of a constipated stool or with explosive diarrhea. Rectal bleeding, usually limited to minimal bright red blood on the toilet tissue, is not uncommon.

Methodology

These guidelines are built on the last set of the American Society of Colon and Rectal Surgeons Practice Parameters for treatment of Fissure-in-ano published in 2004. An organized search of MEDLINE, Pubmed, EMBASE, and the Cochrane Database of Collected Reviews was performed through June 2009. Key-word combinations included anal fissure and fissure-in-ano as primary search terms. Directed searches were obtained from the latest-dated reference from the previous version of the parameter to December 2008. The newest data were evaluated to see whether recommendations needed upgrading or downgrading with the additional information. Directed searches of the embedded references from the primary articles were also performed in selected circumstances. The final grade of recommendation was performed using the Grades of Recommendation, Assessment, Development, and Evaluation (GRADE) system (Table 1).

Recommendations

1. Nonoperative treatment continues to be safe, has few side effects, and should usually be the first step in therapy. Grade of Recommendation: Strong recommendation based on moderate-quality evidence 1B

Almost half of all patients in whom an acute anal fissure has been diagnosed will heal with nonoperative

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TABLE 1. The GRADE System–grading recommendations[a]

	Description	*Benefit vs risk and burdens*	*Methodologic 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, methodologic 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, methodologic 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

RCT = randomized controlled trial.
[a]Adapted from Guyatt G, Gutermen 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.

measures, ie, sitz baths, psyllium fiber and bulking agents, with or without the addition of topical anesthetics or anti-inflammatory ointments.[1–6] In addition to fissure healing, symptomatic relief of pain and bleeding can be achieved with virtually no side effects.

2. Anal fissures may be treated with topical nitrates, although nitrates are marginally superior to placebo with regard to healing. Grade of Recommendation: Strong recommendation based on high-quality evidence 1A

Topical nitric oxide donors have been associated with healing in at least 50% of treated chronic fissures,[7–13,18–21] and use of topical nitroglycerin significantly decreases pain during the therapy period.[7,9,16] An updated Cochrane review of medical treatment of anal fissures has concluded, however, that topical nitroglycerin remains only marginally better than placebo in healing anal fissures.[22] Dose escalation does not improve healing rates.[7,14,16]

The principal side effect is headache, occurring in at least 20% to 30% of treated patients.[7,17,22] This adverse effect is dose-related and causes cessation of therapy in up to 20% of patients.[15] The incidence of fissure recurrence after treatment with topical nitric oxide donors is dramatically higher[7,8] compared with outcomes after surgery, although morbidity is lower.[8,10,12] Patients who do not respond to topical nitrates should be referred for botulinum toxin injections or surgery.[7,8,10]

3. Anal fissures may be treated with topical calcium channel blockers, with a lower incidence of adverse effects than topical nitrates. There are insufficient data to conclude whether they are superior to placebo in healing anal fissures. Grade of Recommendation: Strong recommendation based on moderate-quality evidence 1B

Topical calcium channel blockers have been associated with healing of chronic anal fissures in 65% to 95% of patients.[24–31] Side effects include headache, in up to 25% of patients,[29] and occur less frequently than with topical nitrates.[27–29] There are still fewer randomized controlled trials of topical calcium channel blockers than of topical nitric oxide donors.

Anal fissures may also be treated with oral calcium channel blockers.[32–35] This is associated with a lower rate of fissure healing than topical application and has a higher incidence of side effects.[32] Few direct comparisons of topical and oral calcium channel blockers exist.

4. Botulinum toxin injection has been associated with healing rates superior to placebo. There is inadequate consensus on dosage, precise site of administration, number of injections or efficacy. Grade of Recommendation: Strong recommendation based on low-quality evidence 1C

Injection of botulinum toxin into the internal anal sphincter allows healing in 60% to 80% of fissures,[36,39,41,43,45,46] and at a higher rate than placebo.[42] The most common side effects are temporary incontinence to flatus in up to 18% of patients[38,39,42,45] and stool in 5%.[49] Recurrences may occur in up to 42% of cases,[38,39,46,47] but patients may be re-treated with a good rate of healing.[39,44] Higher doses are associated with improved rates of healing and are as safe as lower doses.[39,44] Topical nitrates appear to potentiate the effects of botulinum toxin in patients with refractory anal fissure.[37,48] There is no consensus on dose, site, or number of injections.[40,47] Patients in whom botulinum toxin injection therapy fails should be recommended for surgery.[40]

There are few reports regarding the use of gonyautoxins for treatment of anal fissure. We have intentionally not included this treatment modality because of the paucity of data and the widespread unavailability of these agents.

5. Lateral internal sphincterotomy is the surgical treatment of choice for refractory anal fissures. Grade of Recommendation: Strong recommendation based on high-quality evidence 1A

Lateral internal sphincterotomy (LIS) remains the surgical treatment of choice for refractory anal fissures.[22,49] Multiple studies[50–53] and a recent Cochrane review[54] show that LIS is superior to uncontrolled manual anal dilation, yielding superior healing rates with less incontinence. Controlled pneumatic balloon dilation has shown promise in one small series.[55] LIS offers superior healing and lower incontinence rates compared with posterior sphincterotomy-fissurectomy alone.[56] The addition of topical nitric oxide donors[57] or botulinum toxin[58–60] improves results of fissurectomy in nonrandomized series.

6. Open and closed techniques of lateral internal sphincterotomy (LIS) yield similar results. Grade of Recommendation: Strong recommendation based on high-quality evidence 1A

Further well-done studies confirm the prior assertion that there is no difference in outcomes between properly performed open or closed sphincterotomy.[54,61–64]

7. LIS tailored to fissure characteristics yields equivalent or worse healing rates, and less incontinence, than traditional LIS to the dentate line. Grade of Recommendation: Weak recommendation based on moderate-quality evidence 2B

A "tailored sphincterotomy" has been proposed in an effort to reduce the rate of minor incontinence following LIS. Two methods are typically employed—sphincterotomy only to the apex of the fissure or anal calibration. Three randomized trials of traditional vs fissure apex sphincterotomy show statistically superior healing rates in the traditional arm; 2 reported worse continence in the traditional arm,[65,66] whereas one did not.[67] To improve these results, a calibrated sphincterotomy has been reported. In these studies, fissure apex sphincterotomy was compared with a sphincterotomy that was extended based on the amount of residual anal stenosis remaining by use of a calibrated sound. In 3 small series, this method showed equivalent healing and lower incontinence rates than traditional sphincterotomy.[68–70]

8. Anal advancement flap and subcutaneous fissurotomy are surgical alternatives to LIS. Grade of Recommendation: Weak recommendation based on low-quality evidence 2C

Techniques that do not divide the internal anal sphincter yet allow good healing rates are theoretically attractive, especially in patients with preexisting continence problems or in those without internal anal sphincter hypertonia. Small series of various anal advancement flaps show promise.[71,72] One series of unroofing subcutaneous sinuses associated with typical anal fissures reported excellent healing without changes in continence.[73] Larger trials in this area are still needed.

9. Surgery is consistently superior to medical therapy and may be offered without a pharmacological treatment failure. Grade of Recommendation: Strong recommendation based on high-quality evidence 1A

Multiple trials continue to confirm the superiority of LIS to any topical or injected agent with low rates of incontinence.[10,46,74–78] Most investigations show that compliance with long-term medical therapy remains an issue. The Cochrane Collaboration analyses of both surgical and nonsurgical therapies for anal fissure confirm these conclusions.[22,54] Quality of life (QOL) is poor in patients with persistent fissure, whereas patients undergoing LIS report significantly improved QOL. Fecal continence QOL is preserved in the vast majority of patients following LIS.[79–81]

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