Common Anal Problems

Jared Wilson Klein, MD, MPH

INTRODUCTION

The anus has a critical, if thankless, function. It permits the retention and subsequent voluntary, timed evacuation of fecal matter.

Anatomic Pearls

The anus represents the terminus of the gastrointestinal tract and stretches from the pelvic floor (levator ani) to the skin surface (Fig. 1). The dentate line is the embryologic divide between endoderm and ectoderm; as such, tissue proximal to this point does not receive somatic innervation and is insensate. Distal from the dentate line, the anoderm is a transitional zone between columnar and squamous epithelium. The tripartite sphincter complex includes the internal sphincter (located more proximal and closer to the lumen of the anus), the external sphincter (slightly more distal and wrapping around the internal sphincter), and the puborectalis (a U-shaped, sling-like muscle at the anorectal junction).

Physiologic Refresher

The internal and external sphincters are the workhorses of the anus. The internal sphincter receives parasympathetic innervation and relaxes involuntarily with

KEYWORDS

- Hemorrhoids
- Perirectal abscess
- Anal fistula
- Anal fissure
- Fecal incontinence

KEY POINTS

- Unusual presentations of common anal problems may herald underlying systemic disease.
- There are several medical therapies available for the treatment of anal fissures, including nitroglycerin, diltiazem, and botulinum toxin.
- Management of internal hemorrhoids depends on the severity of symptoms.
- Perirectal abscesses require drainage and commonly result in fistula formation.
- Fecal incontinence is common in elderly populations. In younger patients, it should prompt a thorough evaluation not only for sphincter dysfunction, but also neurologic and gastrointestinal disorders.
- Anal itching is most often related to poor anal hygiene.
- Rectal prolapse typically requires definitive surgical fixation.

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distention of the rectal vault. This triggers the urge to defecate. The external sphincter, innervated by the pudendal nerve, is under voluntary control, and its integrity is crucial for maintaining fecal continence. The puborectalis plays an adjunctive role in maintaining continence. The anal glands (also called the crypts of Morgagni) and the venous hemorrhoidal plexuses facilitate lubrication during defecation.

ANAL FISSURES

Symptoms

The hallmark of an anal fissure is severe anal pain. This tends to be worse with bowel movements and with direct pressure on the site (eg, sitting). Some fissures are traumatic (eg, passage of hard stool, receptive anal intercourse, or insertion of a foreign body such as enema or endoscope), while others are idiopathic. Acute fissures, which have been present for days to weeks, tend to bleed slightly, and patients may report red blood on the tissue. Chronic fissures have been present for months or longer; they bleed less commonly and tend to have hyperkeratotic edges.

Diagnostic Test/Imaging Study

Anal fissures can be diagnosed with a classic history and simple external examination of the anus and perineum. By applying traction on the buttocks, the fissure can be visualized radiating out from the anus, typically in the midline and usually posterior in orientation. Acute fissures have the appearance of lacerations, while chronic lacerations are more fibrotic and may have a sentinel skin tag at the distal end (Fig. 2).

Differential Diagnosis

Other causes of anal pain and bleeding can masquerade as fissures, including abscess, fistula, and hemorrhoids (Box 1). Additionally, anal fissures with any lateral orientation (not in the midline) should prompt investigation into secondary causes.
such as anal cancer, human immunodeficiency virus (HIV), inflammatory bowel disease, syphilis, or tuberculosis (Fig. 3).²

**Management**

Most acute anal fissures will resolve within a few weeks following institution of conservative measures such as sitz baths and stool softeners. There are several medical therapies available for chronic fissures aimed at reducing sphincter spasm (Table 1).³,⁴ Both topical nitroglycerin and topical diltiazem have been shown to improve healing of chronic anal fissures, although a recent head-to-head trial suggested the superiority of diltiazem.⁵ Botulinum toxin can be injected into the internal sphincter to alleviate spasm, although this may result in temporary incontinence of flatus and/or stool. Patients who fail these therapies are commonly referred for surgical sphincterotomy; however, this procedure comes with a risk of fecal incontinence.⁶ For fissures associated with systemic disease, therapy should be directed at the underlying cause.

**HEMORRHOIDS**

**Symptoms**

Most often, patients with hemorrhoids report rectal bleeding. Although this is typically bright red in color, the quantity can range from scant blood on the tissue to more

**Box 1 Anal fissure Differential diagnosis**

- Anal fistula
- Perirectal abscess
- Thrombosed hemorrhoid
- If lateral orientation (not midline), consider underlying pathology (see Fig. 3)
significant hemorrhage. This variation is caused by the vascularity of hemorrhoidal tissues, which act to cushion the anus during defecation (see Fig. 1). There may also be mucous-like discharge. Patients sometimes report discomfort, but usually this is dull in nature. Internal hemorrhoids are typically painless, as their innervation arises from above the dentate line, while external hemorrhoids can be acutely pruritic or painful, particularly when thrombosed (Fig. 4). Patients commonly note a mass protruding from or near the anus, usually worse with straining or Valsalva maneuver.

**Diagnostic Test/Imaging Study**

Like so many anal conditions, the diagnosis relies primarily upon history and physical examination. The buttocks should be spread to reveal the anus. Hemorrhoids are

<table>
<thead>
<tr>
<th>Medical therapies for chronic anal fissures</th>
<th>Adverse Effects and Precautions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Regimen</strong></td>
<td><strong>Adverse Effects and Precautions</strong></td>
</tr>
<tr>
<td>Topical nitroglycerin 0.2%–0.4% ointment, apply 1 in to anus every 12 h for up to 3 wk</td>
<td>Headache, should not be administered with PDE-5 inhibitors (eg, sildenafil)</td>
</tr>
<tr>
<td>Topical diltiazem 2% gel or ointment, apply small amount to anus 3 times daily&lt;sup&gt;a,b&lt;/sup&gt;</td>
<td>Headache (less common than nitroglycerin)</td>
</tr>
<tr>
<td>Intrasphincteric botulinum toxin injection, 10–100 units once&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Temporary incontinence</td>
</tr>
</tbody>
</table>

*Abbreviation: PDE, phosphodiesterase.*

<sup>a</sup> Not approved by the US Food and Drug Administration.

<sup>b</sup> Not commercially available in the United States, must be compounded.
typically flesh-toned or slightly purple, mucous-covered nodules. If necessary, the examiner can ask the patient to bear down in order to expose nonexternal hemorrhoids. Anoscopy is an easy, in-office maneuver to better visualize the anus, particularly internal hemorrhoids. The device includes a cylinder and obturator component, typically disposable and made of clear plastic (Fig. 5). It is coated in water-soluble lubricant before being gently inserted into the anus. Leaving the external cylinder in place, the obturator can be removed, permitting the examiner to better visualize the entire anal mucosa for abnormalities.

**Differential Diagnosis**

Clinicians must be cautious not to misattribute rectal bleeding to hemorrhoids, thereby overlooking more proximal causes such as malignancy, inflammatory bowel disease, or arteriovenous malformations (Box 2). This is particularly important in older adults and patients with risk factors for these diseases. It is also necessary to differentiate the presence of protruding hemorrhoids (containing only mucosa) from rectal prolapse (including full thickness of the bowel wall; more details in subsequent section).
Management

The foundation of therapy for all hemorrhoids is treatment of constipation in order to reduce straining. Adequate hydration and increased fiber intake, either in the form of foods rich in fiber or fiber supplements (eg, psyllium), should be recommended to all patients. Sitz baths can also ameliorate acute symptoms. There are several topical remedies used for relief of acute symptoms, many of which are available over the counter and include topical corticosteroids (hydrocortisone 1% cream/ointment), astringents (witch hazel), and topical anesthetics (dibucaine and pramoxine). Evidence is lacking that these preparations speed resolution of the hemorrhoids. Nevertheless, these treatments are often recommended, particularly in the acute phase. Although analgesia is sometimes required, opioids should be avoided because of their adverse effects on gastrointestinal (GI) motility. Treatment of internal hemorrhoids is guided by the stage, which is based on the patient’s symptoms (Table 2). Patients with significant symptoms and grade 3 and especially grade 4 symptoms may be offered more invasive treatments, including ligation banding and surgical hemorrhoidectomy. Although these procedures can be performed in the office, patients are often referred to a specialist, particularly for hemorrhoidectomy. The presence of a thrombosed external hemorrhoid often requires surgical management with thrombectomy, particularly within 72 hours of symptom onset. Adverse effects of invasive treatments include local pain, abscess formation (or other infection), and bleeding.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Diagnostic Features</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bleeding, often painless</td>
<td>Avoid constipation, increase fiber intake</td>
</tr>
<tr>
<td>2</td>
<td>Protrusion with spontaneous reduction</td>
<td>Avoid constipation, increase fiber intake, Rubber band ligation, Sclerotherapy</td>
</tr>
<tr>
<td>3</td>
<td>Protrusion requiring manual reduction</td>
<td>Avoid constipation, increase fiber intake, Rubber band ligation, Sclerotherapy, Elective referral for hemorrhoidectomy</td>
</tr>
<tr>
<td>4</td>
<td>Protrusion with inability to manually reduce</td>
<td>Avoid constipation, increase fiber intake, Elective referral for hemorrhoidectomy</td>
</tr>
<tr>
<td>Thrombosed</td>
<td>Severe pain, purple color change</td>
<td>Urgent surgical thrombectomy</td>
</tr>
</tbody>
</table>
PERIRECTAL ABScessoES

Symptoms

Abscesses of the perirectal and perianal areas typically occur when the anal glands or crypts (see Fig. 1) become occluded, permitting retention of bacteria and inflammatory cells. These lesions commonly present with dull, aching pain in the perineum as well as fevers. Patients with perirectal abscess can occasionally present with sepsis and critical illness, as is the case with Fournier gangrene. For this reason, rectal examination is mandatory in the evaluation of febrile patients without an obvious source, although caution is urged in patients with neutropenia.

Diagnostic Test/Imaging Study

Most perirectal abscesses can be diagnosed based on a typical history as well as rectal examination. Anoscopy is uncomfortable and often unnecessary. Abscesses are categorized based on location, with perianal and ischiorectal abscesses being the most common (Fig. 6). Supraleaver abscesses are much less common. Advanced imaging techniques, such as computed tomography (CT) or ultrasound, are occasionally necessary to identify the location and extent of infections, particularly for deeper abscesses (eg, supraleaver and ischiorectal sites). These tests may also be helpful in excluding the presence of other entities.

Differential Diagnosis

Anal fistulas are part of the same disease continuum as perirectal abscesses and can also present with pain and swelling, although there is often also drainage (Box 3). It may be important to exclude the presence of prostatitis or a prostatic abscess in men without an obviously visible perirectal abscess. This can be done via physical
examination, sometimes in concert with advanced imaging techniques. Pilonidal cysts can occasionally become infected, but will typically be located in the midline and posterior from the anal verge. Thrombosed hemorrhoids, although similarly painful, are much less common and have a typical purpuric appearance. It is always important to consider the possibility of underlying bowel pathology (particularly inflammatory bowel disease, malignancy or sexually transmitted disease) in patients with recurrent, severe, or deep abscesses.

Management

As antibiotics will not penetrate the abscess cavity, it is crucial to drain these pockets. For perianal abscesses, bedside incision and drainage can be performed after appropriate preparation of the site. Postdrainage care should involve sitz baths, stool bulking, and wound care. Deeper abscesses and those involving the anal sphincter require surgical consultation in order to ensure complete drainage and to maintain sphincter integrity. The use of antibiotics after drainage is controversial, although they are often prescribed for patients with immunocompromising conditions, underlying bowel pathology, or diabetes.\(^\text{12}\) If prescribed, antibiotics should cover common enteric pathogens (Box 4).\(^\text{13}\) Despite treatment, upwards of 50% of perirectal abscesses will result in the formation of an anal fistula.\(^\text{14}\)

**ANAL FISTULAS**

**Symptoms**

Anal fistulas, most often the sequelae of perirectal abscesses, typically present with drainage. This is a result of the persistent tract between the abscess cavity and the anus. There may also be pain, bleeding, or swelling in the area.

**Diagnostic Test/Imaging Study**

Given the discomfort that occurs with probing these lesions, anal fistulas may need to be examined after administration of sedation or anesthesia. Fistulas will often appear as an opening in the skin beyond the anal verge. Occasionally a fibrous cord or tract may be palpable. Anoscopy can aid in the identification of an internal opening, although the patient may not tolerate this examination. Fistula severity is based on the degree of sphincter involvement (Fig. 7).

**Box 3**

**Perirectal abscess DDx**

- Anal fistula
- Prostatitis/prostatic abscess (men only)
- Infected pilonidal cyst
- Thrombosed hemorrhoid (rare)

**Box 4**

**Oral antibiotics covering common enteric pathogens**

- Trimethoprim-sulfamethoxazole and metronidazole
- Amoxicillin with clavulanic acid
- Moxifloxacin
Differential Diagnosis

Rarely, anal fistulas may be caused by underlying systemic diseases, including inflammatory bowel disease, malignancy, sexually transmitted infections, or pelvic radiation (Box 5). This is particularly true in the case of extrasphincteric fistulas, which connect from the exterior directly to the rectum, as well as with multiple or chronic fistulas. It is also important to exclude the possibility of an inadequately drained abscess cavity.

Management

Anal fistulas require referral for surgical treatment, typically by opening the fistulous tract and allowing it to heal via secondary intent (Table 3). This can be challenging, depending on the degree of involvement of the sphincter, and may lead to postoperative incontinence. High-grade fistulas require advanced surgical techniques in an attempt to reconstruct the sphincter musculature and maintain continence.

Fecal Incontinence

Symptoms

Incontinence of stool is defined as involuntary loss of external sphincter control resulting in inadvertent passage of fecal matter. Passing small amounts of stool with flatus

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**Box 5**

Anal fistula DDx

- Incompletely drained perirectal abscess
- Extrasphincteric or extensive fistulas, consider underlying pathology
or immediately following bowel movements can be physiologic, but more significant incontinence requires additional investigation. Often episodes are provoked by increased intra-abdominal pressure (eg, straining, coughing, bending). Fecal incontinence may represent a late-effect of vaginal delivery; therefore it is more prevalent in women with pelvic floor weakness and comorbid urinary incontinence. The incidence of fecal incontinence also increases with advancing age as well as comorbid GI symptoms, particularly diarrhea or constipation. It is a common symptom in patients over the age of 80, with a prevalence of 10.4% in older women. In is more common in elderly patients with dementia, and in institutionalized patients. It is important to remember that patients may be reluctant to discuss their symptoms due to social stigma and embarrassment.

**Diagnostic Test/Imaging Study**

Although history is the primary diagnostic tool for eliciting the presence and underlying etiology of fecal incontinence, there are several other diagnostic tools available. Simple rectal examination provides the examiner a general sense of sphincter tone as well as pointing to underlying diseases. Patients may require endoscopic examination of the colon to identify underlying malignancy or inflammation. More advanced methods include anal manometry (to quantify sphincter tone), pudendal nerve testing (to assess for delayed conduction, suggesting nerve damage), and anal ultrasound (to look for anatomic muscle damage or other structural abnormalities). These tests are best performed in a specialized laboratory and require referral to a gastroenterologist or colorectal surgeon. In elderly patients, in whom the prevalence of fecal incontinence is so common, work up should be focused on history and examination, and testing reserved only for those patients whose history and examination point to a secondary cause.

**Differential Diagnosis**

There is a broad differential for the symptom of fecal incontinence (Box 6). The primary task is to differentiate primary fecal incontinence (eg, as a result of pelvic floor weakness and/or sphincter dysfunction) from secondary incontinence (eg, related to an underlying neurologic or GI disorder) (Table 4).

<table>
<thead>
<tr>
<th>Location</th>
<th>Sphincter Involvement</th>
<th>Risk of Incontinence</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intersphincteric</td>
<td>Internal</td>
<td>Uncommon (0%–15%)</td>
<td>Fistulotomy, fibrin glue injection, fistula plug</td>
</tr>
<tr>
<td>Trans-sphincteric</td>
<td>Internal and external</td>
<td>Intermediate</td>
<td>Fistulotomy, fibrin glue injection, fistula plug</td>
</tr>
<tr>
<td>Extrasphincteric</td>
<td>Internal and external</td>
<td>Significant (25%–50%)</td>
<td>Fistulotomy, endorectal flap, seton drain</td>
</tr>
</tbody>
</table>

**Box 6**

**Primary fecal incontinence DDx**
- Obstetric sphincter damage
- Surgical sphincter damage (fistulectomy, hemorrhoidectomy)
- Pelvic floor weakness
Management

Once secondary causes have been identified and treated, the management of primary fecal incontinence involves supportive and surgical options. Supportive measures include protective undergarments and scheduled voiding. Some patients have found significant improvement in symptoms via biofeedback techniques. In patients with significant diarrhea, bulking agents (eg, psyllium) and antidiarrheal medications (eg, loperamide) may provide some relief. Various injectable materials, including silicone and polymer gels, can be injected into the mucosa to narrow the anal canal. These may be considered for patients who have failed other conservative approaches or have focal internal sphincter dysfunction. Sphincteroplasty is the gold standard therapy, but it is reserved for patients who have failed conservative measures or who have significant incontinence.

PRURITIS ANI

Symptoms

Anal itching (also termed pruritis ani or anusitis) is a common symptom. The itching is usually centered around the sphincter, but may also involve the perineum and gluteal cleft. Pain and irritation are commonly associated complaints. Scant bleeding may be present, and some patients report a rash, although this is often difficult to self-identify.

Diagnostic Test/Imaging Study

The primary diagnostic tool is a careful physical examination of the perianal region for signs of poor hygiene and/or primary anal disorders. A specimen can be collected, if indicated. Options include skin scraping, punch biopsy, and transparent tape testing (Table 5).
Differential Diagnosis

The most common cause of pruritis ani is poor perianal hygiene with a cycle of itching and scratching (Box 7). This symptom is thus more common in the setting of fecal incontinence and various other primary anal disorders. There are numerous other

<table>
<thead>
<tr>
<th>Table 5</th>
<th>Diagnostic testing options for pruritis ani</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Name</td>
<td>Used to Diagnose...</td>
</tr>
<tr>
<td>Skin scraping</td>
<td><em>Candida</em> or tinea infection</td>
</tr>
<tr>
<td>Punch biopsy</td>
<td>Malignancy or primary dermatologic condition</td>
</tr>
<tr>
<td>Transparent tape test</td>
<td>Pinworm infection</td>
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</tbody>
</table>

**Differential Diagnosis**

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<table>
<thead>
<tr>
<th>Box 7</th>
<th>Pruritis ani DDx</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Poor perianal hygiene</td>
<td></td>
</tr>
<tr>
<td>• Anal disorder</td>
<td></td>
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<tr>
<td>o Prolapsing hemorrhoids</td>
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<tr>
<td>o Fissure</td>
<td></td>
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<tr>
<td>o Fistula</td>
<td></td>
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<tr>
<td>• Dermatologic disorder</td>
<td></td>
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<tr>
<td>o Contact dermatitis</td>
<td></td>
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<tr>
<td>o Psoriasis</td>
<td></td>
</tr>
<tr>
<td>o Lichen sclerosus</td>
<td></td>
</tr>
<tr>
<td>• Infection</td>
<td></td>
</tr>
<tr>
<td>o Fungus/yeast (tinea cruris or <em>Candida</em>)</td>
<td></td>
</tr>
<tr>
<td>o Sexually transmitted infection (condyloma, herpes)</td>
<td></td>
</tr>
<tr>
<td>o <em>Enterobias vermicularis</em> (pinworm)</td>
<td></td>
</tr>
<tr>
<td>• Malignancy/neoplasia</td>
<td></td>
</tr>
<tr>
<td>o Squamous cell neoplasia or carcinoma</td>
<td></td>
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<tr>
<td>o Adenocarcinoma</td>
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</table>
diagnoses associated with anal itching, including dermatologic, infectious, and malignant etiologies.

Management

The foundation of managing pruritis ani involves ensuring adequate perianal hygiene, including regular bathing with warm, soapy water. The area should be kept dry, and talcum powder can be applied if necessary. In the setting of significant skin breakdown or excoriations, a barrier ointment (eg, zinc oxide) can be applied. Topical steroids (eg, hydrocortisone 1% cream or ointment) can be used briefly for symptomatic relief. If present, an underlying cause should be confronted.

RECTAL PROLAPSE

Symptoms

Also called procidentia, rectal prolapse classically presents with a large rectal mass. There is typically pain, bleeding, and fecal incontinence with difficulty maintaining anal hygiene. Most patients report difficulty with constipation and straining during bowel movements, but also suffer from incontinence. Occasionally patients have complete outlet obstruction, and rarely they may have associated mucosal ulceration. Patients tend to be women, and the condition occurs more commonly with advancing age.

Diagnostic Test/Imaging Study

Rectal prolapse can be diagnosed purely on rectal examination and is characterized by circumferential mucosal folds, as opposed to radial folds seen in hemorrhoidal disease (Fig. 8). If necessary, the patient can be instructed to strain to elicit the prolapse. More advanced imaging techniques are rarely necessary.

Differential Diagnosis

The primary diagnosis to differentiate from rectal prolapse is large, protruding internal hemorrhoids, which can be differentiated based on the orientation of the mucosal folds.

Management

Initial management for rectal prolapse involves manual reduction, which is particularly important if there is any concern for strangulation of the blood supply. Patients
should be advised to avoid constipation by maintaining adequate hydration and fiber intake. Pelvic floor exercises (Kegels) may be suggested, although rigorous evidence of their benefit is lacking. Definitive management relies heavily upon surgical fixation, which can be accomplished through transabdominal (preferred) or transperineal approaches.24,25

SUMMARY

Anal problems are pervasive, embarrassing and vexing to patients. Primary care providers should be well versed in addressing these concerns, which uncommonly require referral for specialty care. Additionally, anal symptoms and findings may herald previously undiagnosed underlying illness.

REFERENCES