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Anorectal Emergencies

Introduction

Anorectal complaints in the emergency department (ED) can be associated with great stress or embarrassment for the patient, and often lead to delayed presentation, with patients attempting to self-treat or simply dealing with the symptoms. While most anorectal conditions are not life-threatening, they may cause significant discomfort. Symptoms commonly include complaints of rectal/anal pain or soreness, bleeding, itching, or swelling. Patients may make an incorrect self-diagnosis of hemorrhoids. Likewise, the physician may also quickly attribute their symptoms to hemorrhoids. A recent study found suboptimal diagnostic accuracy for seven common anal pathologic conditions (including prolapsed internal hemorrhoids, thrombosed external hemorrhoid, abscess, fissure, fistula, condyloma acuminata, and rectal prolapse) that varied across specialties.¹ Overall diagnostic accuracy for all physicians was 53.5%, with surgeons having the highest overall accuracy at 70.4%. Physicians correctly identified condylomata and rectal prolapse most frequently, and hemorrhoidal conditions least frequently. There was no correlation between years of experience and diagnostic accuracy. Better initial diagnosis will likely improve symptomatic management and proper definitive follow-up.

Hemorrhoids

Hemorrhoids are a common cause of rectal bleeding and anal discomfort prompting ED presentation. Hemorrhoids occur when the internal or external venous plexus becomes engorged, thrombosed, or prolapsed. Hemorrhoids are categorized by their location of origin: internal versus external. Separated by the dentate line, internal hemorrhoids arise from endoderm and are lined with simple columnar epithelium. Internal hemorrhoids are not readily palpable if not prolapsed or thrombosed, and may be most easily viewed with an anoscope. Internal hemorrhoids have no sensory innervation and are non-tender unless prolapsed or thrombosed. External hemorrhoids are more easily visualized on physical examination, given their origin distal to the dentate line arising from ectoderm composed of stratified squamous epithelium.

Risk factors closely related to the development of hemorrhoids include straining at stool, constipation, diarrhea, and loss of connective tissue supporting peri-rectal vasculature associated with older age. Hemorrhoids often develop during pregnancy, and may resolve spontaneously after giving birth. Other etiologies, including portal hypertension, narcotic-induced constipation, and other sources of constipation, including tumors, are a precipitating source for hemorrhoid development. A recent study suggests a significant relationship between thrombosed external hemorrhoids and the presence of internal hemorrhoids, the practice of anoreceptive sex, and acute increase in alcohol consumption.²

Classification. Internal hemorrhoids are a common source of painless rectal bleeding. Patients often complain of bright red blood coating the stool or on the toilet paper. A description of dark or black stools should prompt further consideration for upper gastrointestinal etiology. Internal hemorrhoids

Executive Summary

- Anorectal conditions are commonly misdiagnosed on initial evaluation.
- Assistance with patient positioning, good lighting, and analgesia are often necessary for adequate examination.
- Imaging is often required in anorectal abscesses to determine their full extent.
- Anorectal manifestations of STIs may occur in the absence of anal sex.

are classified based on amount of prolapse. First-degree hemorrhoids may project into the anal canal, but do not extend distal to the dentate line and do not cause prolapse. Second-degree internal hemorrhoids often prolapse during straining and spontaneously reduce. Third-degree hemorrhoids again prolapse during straining, but require manual reduction. Fourth-degree internal hemorrhoids prolapse and are non-reducible, often causing strangulation and edema. External hemorrhoids, more easily visualized on inspection, are further classified based on the presence of thrombosis. (See Table 1.) A thrombosed external hemorrhoid will appear as an enlarged, painful, bluish mass. Differentiation between internal and external hemorrhoids upon visual inspection is not easy; a recent study found that internal hemorrhoids were commonly misdiagnosed as external hemorrhoids 58% of the time by surgical residents.³

Evaluation and Treatment in the ED. Bleeding associated with hemorrhoids is generally self-limited. If any hemodynamic instability exists, or signs and symptoms of anemia are present, a CBC should be obtained to evaluate hemoglobin and hematocrit, and the patient should be resuscitated appropriately. Imaging is not warranted if symptoms and examination findings are consistent with internal/external hemorrhoids.

Treatment of internal hemorrhoids depends on the degree classification. First-degree internal hemorrhoids should be treated with conservative management, including high-fiber diet, adequate hydration, stool softeners, and sitz baths. Sitz baths may be performed with warm or cool

water, whichever provides more relief to the patient. Topical steroids (hydrocortisone, others) may be used for relief. Use should be limited to avoid atrophic changes of the skin. The WASH regimen has previously been described for conservative management and consists of warm water, analgesic agents, stool softeners, and high-fiber diet.⁴ Second-degree internal hemorrhoids may also be treated conservatively; however, surgical follow-up is recommended. Third-degree internal hemorrhoids should be reduced in the ED, and close surgical follow-up is recommended for definitive management. Fourth-degree internal hemorrhoids are at high risk for thrombosis and gangrenous changes, and ED surgical consultation is warranted.^{5,6,7} Definitive treatment will be decided per the surgical consultant, and may include sclerotherapy, banding, or hemorrhoidectomy. Minimal rectal bleeding may persist acutely following definitive treatment.

If a patient presents to the ED with significant rectal bleeding or any signs of anemia or hypovolemia, ED surgical consultation is warranted, with particular concern for those patients on anticoagulation therapy.^{8,9,10} Treatment for a thrombosed external hemorrhoid depends on the severity of the symptoms and timeframe of thrombosis. Surgical excision of a thrombosed hemorrhoid is reserved for patients during the first 48-72 hours after the onset of symptoms. Usually the formation of an external hemorrhoid hematoma is self-limiting and will resolve within 7-10 days.

Patients with severe pain and duration of symptoms less than 72 hours may benefit from clot excision in

the ED.¹¹ Excision should not be performed in the ED on immunocompromised patients, patients with coagulopathy, children, or patients with portal hypertension. With the patient lying on his or her side or in the prone position, the practitioner's assistant should provide manual separation of the buttocks to expose the anal region. If no assistant is available, tape may be applied to each buttock to provide separation. Clean the area and administer local anesthesia to the overlying skin of the hemorrhoid (0.5% bupivacaine or buffered 1% lidocaine with epinephrine 1:100,000). An elliptical incision is made distal to the anal verge, with caution taken to avoid the anal sphincter. The thrombosed hemorrhoid is unroofed and the entire exposed clot removed.¹² Apply direct pressure or silver nitrate as needed to control bleeding. Gauze with or without a small pressure dressing may be applied and removed during the patient's first sitz bath 6-12 hours following the procedure. Narcotics may be prescribed for pain control, but may cause worsened constipation. Routine follow-up is not always required; however, persistent pain or bleeding mandates that the patient should follow up within 24-48 hours with a surgeon. If bleeding persists in the ED, surgical consultation is warranted.

Strangulation of internal hemorrhoids and thrombosed external hemorrhoids are painful and require surgical intervention. For patients with minor symptoms such as intermittent bleeding or pruritus, local treatment with 15-minute sitz baths three times daily, thorough and gentle drying, and steroid ointments should provide significant relief. A

high-fiber diet with bran or roughage, stool softeners/bulk laxatives such as those containing psyllium, and adequate fluid intake should be prescribed to prevent recurrence.

Anal Fissures

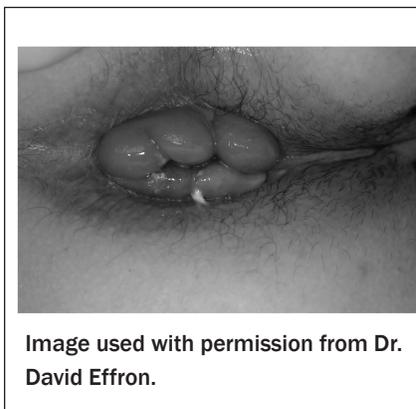
An anal fissure is a tear in the lining of the anus. Anal fissures are the most common cause of painful rectal bleeding. While common in young to middle-aged adults, the lifetime incidence of anal fissure has been reported to be around 11%.¹³ Patients often describe a sharp burning or tearing sensation during defecation. Symptoms are most significant during or immediately following a bowel movement, especially with severe diarrhea or passage of a hard stool. Dull pain may persist following bowel movements; however, symptoms most commonly resolve between episodes. Patients will often describe bright red blood commonly observed on the toilet paper. Pain and subsequent sphincter spasm may be severe enough to cause the patient to avoid defecation and, in turn, worsening constipation. More than 90% of anal fissures are observed in the posterior midline location of the anus. A minority of anal fissures are observed in the anterior location and are almost exclusively seen in female patients. Anal fissures in children may be caused by child abuse and should be considered as an etiology. If multiple fissures are present, or if they are in areas other than the posterior midline region, other causes should be considered, including HIV, inflammatory bowel disease, or sexually transmitted infection (STI). In a recent study, anal fissures were misdiagnosed 38% of the time and were most often given the diagnosis of internal hemorrhoids.³

Fissures are categorized as acute if present for fewer than six weeks, or chronic if present for greater than six weeks. Chronic fissures may cause itching or pain. These are generally induced by trauma, such as passage of a large or hard bowel movement, explosive diarrhea, or, less commonly, foreign body insertion or anal intercourse.

Table 1: Hemorrhoids

Type	Physiology/Appearance	Treatment
Internal		
First degree	Project into anal canal; however, no prolapse	Conservative management*
Second degree	+Prolapse Spontaneously reduce	Conservative management +/- Surgery follow up
Third degree	+Prolapse Require manual reduction	Reduction in ED Conservative management +Surgery follow-up
Fourth degree	+Prolapse Non-reducible and concern for strangulation	Surgery consultation in ED
External		
Non-thrombosed	Abnormal perirectal tissue; however, normal in tissue appearance	Conservative management
Thrombosed	Enlarged, painful, and/or bluish perirectal mass	ED excision**
*Conservative management including: high-fiber diet, adequate hydration, stool softeners, and sitz baths		
**If presenting with acute thrombosed hemorrhoid within 48-72 hours		

Figure 1: External Hemorrhoids



Visual inspection around the anus should reveal a lesion in the 6 or 12 o'clock position. Anoscopy or digital rectal examination is often unnecessary. The patient's pain often will preclude any possibility of anoscopy, and may make even visual inspection difficult.

ED Management. No acute ED intervention is warranted unless significant bleeding or evidence of infection or abscess is present. Conservative management should be recommended similar to

Figure 2: Anal Fissure

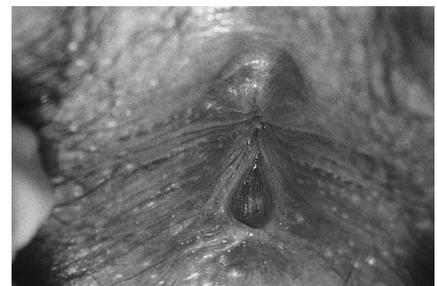


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hemorrhoid management, and the WASH regimen should be recommended, with frequent sitz baths for 10-15 minutes and topical preparations, including hydrocortisone (Anucort-NC®, Anusol-HC®, others). Further sphincteric relaxation can be provided with nitroglycerin (0.2%) applied 2-3 times daily or nifedipine gel (2%) applied 4 times daily. Nitroglycerin is a vasodilator, and both agents reduce the internal anal sphincter pressure.¹⁴ Topical diltiazem 2% gel has also been used to decrease internal anal sphincter pressure, and was found to be as

Table 2: Conservative Regimen for Hemorrhoids and Anal Fissures

- High-fiber diet
- PO hydration
- Stool softeners
- Topical steroids (hydrocortisone)
- Sitz baths (warm or cool)

* May consider adding topical nitrates or calcium channel blockers to regimen if no relief in attempt to avoid surgical intervention

efficacious as the other two topical agents in one report, and superior in another report.^{15,16} Botulinum toxin injected locally into the internal anal sphincter may be effective for up to three months, but is generally not an ED procedure and may cause temporary incontinence of flatus and stool.

Most patients will experience symptomatic relief within 2-3 days, with acute fissures resolving completely within weeks. Persistent symptoms or frequent recurrence warrant outpatient surgical evaluation and possible sphincterotomy. One study indicated that lateral internal sphincterotomy had a higher rate of success at two months than did botulinum toxin injections.¹⁷ The incidence of major fecal incontinence following lateral internal sphincterotomy has been cited as approximately 5-6%,^{18,19} and another 9% for incontinence of flatus.²⁰ Other procedures such as anal stretch, other sphincterotomies, or dermal flap closure of the fissure are outside the scope of this review.

Singha and Kaiser have developed an algorithm for management of chronic anal fissure in successive steps if the respective prior step did not provide relief or healing: nitroglycerin, botulinum toxin, surgery.²¹ Constipation should be addressed with bulk stool softeners and fiber supplements, such as psyllium seed, wheat dextran, or methylcellulose.

Anorectal Abscesses

Infection of an anal crypt and its gland located between the dentate folds and the rectum may cause anorectal abscess. Perirectal pain is

often the most common complaint. Patients may also complain of perirectal swelling, discharge or drainage, or fevers/chills. The lack of fever or leukocytosis should not exclude the diagnosis. Often, anorectal abscesses are found in a superficial location, and, similar to other locations of the body, will not always have systemic findings of infection.

Pathophysiology. Anorectal abscesses are thought to originate from organisms penetrating the ducts that connect the intraluminal anal crypts to the anal glands. A localized infection forms, causing an intersphincteric abscess, and can also spread through tissue planes, causing other types of anorectal abscesses, including perianal, ischioirectal, and supralelevator/pelvirectal abscess. Ischioirectal abscesses tend to be larger, more indurated, and located lateral on the medial part of the buttocks. Anorectal abscesses can form by spread from superficial skin infections, such as a furuncle, decubitus ulcers, or infected cysts, as well as extension from an intra-abdominal or pelvic source.

Anorectal abscesses are more common in men than women, and are most common in middle-aged patients. Significant risk factors include hemorrhoids, diabetes mellitus, previous surgery, pregnancy, inflammatory bowel disease, and rectal trauma. Co-morbidities causing immunosuppression, including HIV infection, neutropenia, or pharmacologic immunosuppression, are also considered risk factors.

Aerobic and anaerobic organisms are typically present, and

cultures often find mixed flora. Organisms most commonly identified are *E. coli* (49%), Streptococcus (32%), *Bacteroides fragilis* (20%), other Bacteroides (26%), and Peptostreptococcus/Peptococcus (27%).²² Cultures from the abscess have not always been previously recommended; however, new studies suggest that cultures may be appropriate in determining antibiotic therapy. A 2009 retrospective study showed that 19% of cultures obtained from incision and drainage grew methicillin-resistant *Staphylococcus aureus* (MRSA), and only 33% of those patients received adequate antibiotic coverage.²³ A case report found only the sole growth of *Candida albicans* from the incision and drainage of a perirectal abscess.²⁴ This had been accepted as a common organism found in the gastrointestinal tract, and had not been previously reported as an isolate from perirectal abscess culture. Particularly in those immunocompromised patients, culture may be of significant benefit to ensure proper antibiotic coverage.

Types. Anorectal abscesses differ significantly in their ability to be diagnosed upon physical examination. The most common anorectal abscess, and the one most often diagnosed in the ED, is the perianal abscess (40% to 50%), while the supralelevator remains the least frequent (2% to 9%).²⁵

Perianal abscesses are the most common type and are most easily examined and identified given the superficial location. Patients will often present with localized swelling and pain around the anal region. Patients may complain of aggravating pain during bowel movements or when seated. Those not associated with deeper perirectal abscesses are the only abscesses that can be definitively treated in the emergency department.

Ischioirectal abscesses are the other type that may be easily diagnosed on physical examination in the ED. Patients often complain of pain in the buttocks region, and may present with an indurated mass in the

Table 3: Anorectal Abscesses

Location/Type	Description/Exam/Diagnosis	Treatment
Perirectal (most common)	Pain around anal region worse with sitting or bowel movement. Localized swelling or fluctuance around anal region on examination.	Incision and drainage avoiding the anal sphincter*
Ischiorectal	Pain in buttocks worse with sitting. Mass/induration to buttocks may be appreciated on physical examination.	Incision and drainage avoiding the anal sphincter*
Intersphincteric	Pain in anal canal worse with bowel movement. Difficult to observe; however, may be palpated on digital examination.	Surgical consultation
Supralelevator (least common)	Most difficult to diagnosis with physical examination. Consider anoscope or further imaging, i.e., CT.	Surgical consultation
*If concern for extension of abscess, further imaging or surgical consultation is warranted prior to I&D.		

same region. Digital examination may provide some help in localizing the abscess; however, given the deeper location, these may be difficult to palpate in many patients. Intersphincteric abscesses often produce pain in the anal canal or rectum, rectal discharge, and fever; patients often complain of worsened pain with bowel movement. Digital examination may localize a painful mass within close proximity to the anal sphincter. Supralelevator abscesses remain the most difficult to diagnose on physical examination, given the deep location of the infection. Patients may complain of buttocks or perirectal pain, fever, or urinary retention. Intersphincteric and supralelevator abscesses are more difficult to diagnose on physical examination, and will most likely require further imaging to confirm diagnosis.²⁶ Such imaging may include endorectal ultrasound, computed tomography, or MRI.

Ultrasound can effectively identify perirectal or ischiorectal abscess, but would not be adequate in revealing the extent of the infection and would

not likely be helpful in identifying intersphincteric or supralelevator infections. CT imaging is beneficial in confirming the location and extent of an abscess, and may also help diagnose other sources of anorectal abscess, including intra-abdominal or pelvic etiology. Negative CT imaging does not exclude anorectal abscess, as a recent study showed only 77% sensitivity in detection of anorectal abscess on CT, and appeared to miss a higher percentage of those with immunocompromised states such as DM, cancer, HIV, and end stage renal disease.²⁷ MRI has previously been shown to have a higher sensitivity, and may need to be considered with a continued high suspicion of anorectal abscess and negative CT imaging.

For patients with superficial abscesses, without signs of systemic illness, and with low suspicion for significant extent, incision and drainage is the hallmark of treatment, and can be performed safely in the ED. In cases of concern for deeper infection, those with signs of a systemic illness, or immunocompromised

patients, surgical consultation is warranted.

Incision and Drainage in the ED. Incision and drainage of the superficial anorectal abscess is similar in technique to drainage of abscesses in other locations of the body. Care should be taken to avoid cutting the anal sphincter. Given the location of the abscess, visualization may be improved with retraction of the buttocks by an assistant or with tape, similar to the approach previously discussed in the treatment of a thrombosed external hemorrhoid. Anesthesia should be achieved similar to methods used for other abscesses, and may be done by injecting into the dome of the abscess using a small-gauge needle such as 25-30 gauge or, alternatively, infiltrating intradermally around the periphery of the abscess. Complete anesthesia is difficult, as with other abscess locations, and IV analgesics or even procedural sedation may need to be considered for the procedure to be accomplished.

The incision should be made as close to the anal verge as possible to prevent development of a long fistula tract, and, once again, care should be taken to avoid the anal sphincter. The incision should be long enough to allow for adequate exploration and destruction of any loculations. The abscess should be drained and packed similar to other abscesses.

Wound cultures may help ensure adequate antibiotic coverage, particularly in immunocompromised patients. In otherwise healthy patients, surgical drainage is the most important treatment, and culture results infrequently influence further care. Patients should be urged to return to the emergency department with any worsening symptoms, including pain, fevers, bleeding, or systemic symptoms. Given the possibility of fistula formation, patients should closely follow up with a surgeon.

There is no consensus regarding post-drainage antibiotic therapy. It seems reasonable that patients with signs of systemic illness or those with immunocompromised states should

Table 4: Causes of Secondary Pruritus Ani^{31,32}

Atopic dermatitis	Contact dermatitis
Candida	Non-sexual bacterial: <i>Corynebacterium minutissimum</i> , staph, strep
Crohn's disease	Hidradenitis suppurativa
Psoriasis	Scleroderma
Diabetes mellitus	Lichen planus
Seborrheic dermatitis	Radiation dermatitis
Condyloma acuminata	Hemorrhoids, skin tags, fistula in ano
Fissures	Pinworm
Pediculosis pubis	Scabies
Erythema multiforme	Dermatitis herpetiformis
Herpes simplex/zoster	Cimicosis/bed bugs
Iron deficiency anemia	Leukemia/lymphoma
Mycosis fungoides	Carcinoma (squamous, basal cell, Bowen and Paget disease)
Uremia	Cholestasis

be started on antibiotic coverage. Because most anorectal abscesses contain mixed aerobes and anaerobes, newer generation penicillins, clindamycin, ciprofloxacin, or sulfamethoxazole/trimethoprim are all acceptable regimens. If cultures are obtained, review of the sensitivity results should be performed to confirm coverage. As with other abscess sites, wound cultures rarely change therapy and are not routinely recommended in otherwise healthy patients.

Pilonidal Abscesses/Cysts

Pilonidal sinuses or cysts occur in the midline of the upper part of the natal cleft, which overlies the lower sacrum and coccyx. Due to their close proximity to the anal region, pilonidal abscesses may be mistakenly diagnosed as a perirectal abscess. Pilonidal cysts are almost exclusively located in the posterior midline over the sacrum/coccyx and do not communicate with the anorectum. It is possible for a fistula from a perirectal abscess to extend near the pilonidal region; however, abscesses are less likely to drain in the midline location. Pilonidal cysts are thought to be formed by an acute inflammatory reaction of ingrown hair follicles, and the resultant sinus is often susceptible to repeat infection due to the

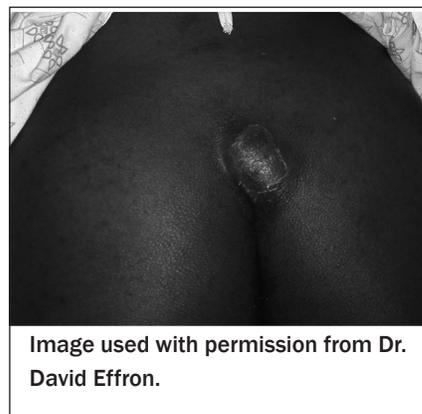
presence of the hair follicle. These cysts or abscesses are more common in men, particularly in men with a significant amount of hair in this region.

Treatment of a pilonidal abscess/cyst is similar to that of other abscesses: incision and drainage. Pilonidal abscesses often require care to adequately drain all purulent material, including contained hair. Ultrasound may be used to assist in evaluating the extent of the abscess. Packing should be placed to allow for continued drainage, and follow-up in 48-72 hours is recommended for re-evaluation. If overlying cellulitis is present, antibiotic coverage for gram-positive skin flora should be prescribed; however, routine administration of antibiotics is not recommended. Recurrent infections may be incised and drained in the emergency department; however, surgical referral should be provided for definitive treatment with removal of the sinus tract and cyst. There is evidence that conservative management with local hygiene and shaving the region every 1 to 3 weeks may be as effective as surgery.²⁸

Pruritus Ani

Pruritus ani is characterized by burning or itching in the perianal region. After hemorrhoids, it is the

Figure 3: Pilonidal Abscess



most common anorectal condition.⁶ It is more common in men than women, and most common between the ages of 30 and 50 years.^{29,30,31} The most common cause is considered to be fecal soiling and contamination of the skin, but there are a number of causes for secondary pruritus ani, including infectious, inflammatory, malignant, and premalignant etiologies, as well as local anorectal pathology.³² (See Table 4.)

Treatment modalities center on anal hygiene, skin protection, and avoidance of local irritants. Primary pruritus ani occurs when there is no discernible cause. Since any factor that causes the perianal region to become moist, soiled, or irritated can cause symptoms, treatment is directed toward keeping the area dry with proper anal hygiene. Alcohol-based wipes should be avoided, as well as perfumes or dyes. Tight-fitting undergarments should be avoided, and a small piece of cotton or a small amount of cornstarch may be used to absorb moisture. Zinc oxide-based ointments, as well as Berwick's solution 9 (crystal violet, brilliant green, and 95% ethanol) have been advocated to leave on the skin for one week.³² Dietary recommendations have included avoidance of coffee, tea, cola, chocolate, tomatoes, citrus products, and dairy products. However, there is no scientific evidence supporting the avoidance of any particular food. Topical capsaicin 0.006% has been used with success, as has 1% hydrocortisone. More potent steroids may cause skin

atrophy.³¹ Antihistamines and antibacterial soaps may help.

Specific therapies for secondary pruritus center on the cause, for example, 2% sulfur with 1% hydrocortisone lotion for seborrheic dermatitis.³¹ Erythrasma, caused by *Corynebacterium minutissimum*, and diagnosed with Wood's lamp, can be treated with erythromycin or a tetracycline with a topical steroid. Injectable therapy with methylene blue has been performed, but is outside the scope of emergency medicine.

Pinworms, or *Enterobius vermicularis*, may be detected by a cellophane tape test applied in the early morning hours, and may be treated with albendazole, mebendazole, or pyrantel pamoate. It is the most prevalent nematode worldwide, and the most common helminthic infection in the United States.³³ It is common among young children and institutionalized adults.⁶

Rectal Prolapse

Rectal prolapse is the protrusion of the rectal wall through the anal orifice and may include all layers of the wall or the mucosal layer alone. Patients most often complain of a rectal mass protruding with defecation. Rectal prolapse may often be mistaken for a prolapsed hemorrhoid. Treatment is rather similar, with evaluation for incarceration, thrombosis, or strangulation. Rectal prolapse is most common in children and elderly adults. Children younger than 3 years of age are most often affected, and those with cystic fibrosis or malnutrition are at higher risk. Children who present with rectal prolapse should be referred for cystic fibrosis testing. Rectal prolapse in elderly adults often presents in elderly women and may be associated with uterine prolapse or cystocele. Chronic constipation and pudendal neuropathies are thought to contribute to rectal prolapse in this elderly population.

Reduction. If any signs of incarceration, ulceration, or strangulation are present, surgical consultation should be requested prior to manual

reduction attempt. Manual reduction is often completed by applying gentle pressure to the mass over several minutes. Starting with the most distal segment, pressure is applied with the thumbs while rolling the walls inward to force the prolapse back through the anus. Procedural sedation, particularly in children, may be required to allow for reduction. Applying granulated sugar to the prolapsed rectum may aid in reduction by desiccation of the mucosa, subsequently reducing edema.³⁴ Following reduction, the patient should be referred for outpatient evaluation to explore underlying etiology. Similar to hemorrhoid and fissure treatment, stool softeners, increased fiber intake, and hydration should be recommended to help avoid constipation. If reduction is unsuccessful, obtain surgical consultation.

Anal Manifestations of Sexually Transmitted Infections

There are a number of sexually transmitted infections (STIs) that may present with anorectal symptoms. Anorectal sex is not a prerequisite for anorectal symptoms, and anorectal manifestations of STIs may occur in the absence of rectal sex.³⁹

Chlamydia may cause a proctitis with rectal pain, fever, and inguinal adenopathy. Anorectal infection occurs in both sexes. There may be ulceration and erythema of the rectal mucosa. Patients may complain of rectal pain, urgency to defecate (tenesmus), fever, or inguinal adenopathy. Treatment is with azithromycin, doxycycline, ofloxacin, or levofloxacin. (See Table 5.)

Lymphogranuloma venereum (LGV) occurs predominantly in warmer subtropical and tropical climates, with matted lymphadenopathy. Immunotypes of Chlamydia that cause LGV (*C. trachomatis* serovars L1, L2, or L3) are different from those that cause simple proctitis. LGV infections may lead to complications such as fistulae, abscess, or rectal strictures.⁴⁰ While

Figure 4: Rectal Prolapse



Image used with permission from Dr. David Effron.

recommended treatment for chlamydia proctitis is typically doxycycline 100 mg twice daily for 7 days, for LGV the treatment course is longer:

- doxycycline 100 mg twice daily for 21 days; or
- azithromycin 1 gram daily for 3 weeks; or
- erythromycin 500 mg four times daily for 3 weeks. (See Table 5.)

Gonorrhea anorectal infection is most commonly reported in men who have sex with men. Anal intercourse is commonly reported, although spread from the vagina can occur in women who do not engage in anal sex. The patients may be asymptomatic, or may have anal discharge, pruritus, or systemic complications such as perihepatitis, meningitis, arthritis, or endocarditis.

Treatment recommendations include:

- ceftriaxone 250 mg IM plus azithromycin 1 gram orally; or
- ceftriaxone 250 mg IM plus doxycycline 100 mg orally twice daily for 7 days.

In cases of severe penicillin allergy, azithromycin 2 grams orally may be administered.

Partners should be treated for gonorrhea and for chlamydia as well.⁴¹

Chancroid is caused by *Hemophilus ducreyi*, and may present with tender/painful anogenital ulcers, lymphadenopathy, or perianal abscesses. It may have a similar appearance to genital herpes.

Treatment options include:

- ceftriaxone 250 mg IM or azithromycin 1 gram orally; or

Table 5: Some Suggested Therapies for Anorectal Sexually Transmitted Diseases

Disease	Suggested Therapy
<i>Neisseria gonorrhoea</i>	Ceftriaxone 250 mg IM plus doxycycline 100 mg twice daily for 7 days
<i>Chlamydia trachomatis</i>	Ofloxacin 300 mg twice daily for 7 days or Doxycycline 100 mg twice daily for 1 week, and Ceftriaxone 250 mg IM or Levofloxacin 500 mg daily for 7 days
Primary and secondary syphilis	Benzathine penicillin 2.4 million units IM Tetracycline 500 mg four times daily for 14 days or Doxycycline 100 mg twice daily for 14 days or Azithromycin/erythromycin for penicillin allergy
Lymphogranuloma venereum	Doxycycline 100 mg twice daily for 21 days or Erythromycin 500 mg four times daily for 21 days or Azithromycin 500 mg daily for 21 days
Herpes simplex	Acyclovir 200 mg 5 times/day or 400 mg three times daily for 7-10 days Famciclovir 250 mg three times daily for 7-10 days Valacyclovir 1 gram twice daily all for 7-10 days
Condyloma acuminata	Topical trichloroacetic acid 80-90% Podophyllin, cryotherapy Laser treatment/imiquimod
Chancroid	Ceftriaxone 250 mg IM or Azithromycin 1 gram orally or Erythromycin base 500 mg 3 times daily for 7 days or Ciprofloxacin 500 mg twice daily for 3 days

- erythromycin base 500 mg 3 times daily for 7 days; or
- ciprofloxacin 500 mg twice daily for 3 days.

Patients should expect improvement symptomatically within 3 days.

Human papilloma virus (HPV) may cause warts (condyloma acuminata) in the perianal region, as elsewhere. This is the most common STI seen by colorectal surgeons.⁴⁰ Lesions may appear within 3 weeks, or may not occur following anal intercourse for up to 6 months. They may cause pain, pruritus, or bleeding. Anoscopy may detect lesions when there are no externally visible growths.⁴² Affected individuals are at risk for anogenital cancers, especially cervical cancer associated with HPV serotypes 16 and 18.⁴³ HPV infection may follow receptive anal intercourse, and the prevalence is higher

in patients who are HIV positive.⁴⁴ If the diagnosis is in doubt, a biopsy may be necessary to establish the diagnosis.

Treatment options include the following:

- podophyllin 25% solution applied topically 1-2 times/week;
- podophylox 0.5% (podophylotoxin) topically 2-3 times/day for 3 days, repeated weekly up to 4 times;
- trichloroacetic acid 80-90% concentration, with a petrolatum jelly barrier to protect surrounding skin;
- 5-fluorouracil gel injected once per week for up to 6 weeks;
- imiquimod 5% cream left in place for 6-10 hours 3 times/week for up to 16 weeks, or 3.75% cream applied daily for up to 8 weeks;
- surgical excision;
- cryotherapy with liquid nitrogen;
- electrocautery;

- laser ablation.

Other therapies, such as interferon alfa, cidofovir gel, and immunotherapy, are outside the scope of this discussion.

Syphilis, caused by the spirochete *Treponema pallidum*, may be spread by anal intercourse. Lesions may take up to 6 months to appear, although the incubation period is more typically 2-6 weeks. Chancres of the anal verge are typically painful, as opposed to genital ulcers. Inguinal adenopathy may be present. As opposed to HPV, condyloma latum from secondary syphilis in the perianal region presents with flat pink or brown lesions. Anal ulcers heal spontaneously within 3-4 weeks. If untreated, secondary syphilis classically develops within 2-10 weeks, with a diffuse maculopapular rash involving the palms and soles of the feet.

Treatment for primary and secondary syphilis includes:

- benzathine penicillin G 2.4 million units IM.

Latent syphilis that has been present for more than one year: 2.4 million units IM weekly for 3 consecutive weeks.

For penicillin allergy, the following are options:

- doxycycline 100 mg twice daily for 7 days; or
- tetracycline 500 mg four times daily for 7 days.

Other options possibly include azithromycin or ceftriaxone, although these have not been studied extensively.

Entamoeba histolytica is a common protozoan infection in men who have sex with men. Patients may have no symptoms or may have abdominal pain, bloody diarrhea, malaise, or fever. Sigmoidoscopy may show ulcers and a friable erythematous mucosa.

Diagnosis is confirmed by testing stool for ova and parasites.

Treatment options include:

- metronidazole 750 mg three times daily for 10 days, and for severe infections, add diiodohydroxyquin 650 mg three times daily for 3 weeks following metronidazole therapy.

Figure 5: Foreign Body



Herpes simplex virus type 2 accounts for most anorectal herpes infections. The incubation period is usually 1-3 weeks, and may present with tenesmus, lymphadenopathy, rectal pain, rectal discharge, or constipation due to pain with defecation. Systemic symptoms such as malaise, fever, and chills may be present. Itching may be present, as with other causes for pruritus ani. There may be friable anorectal mucosa. Diagnosis may be made clinically or with viral culture. Antiviral agents shorten the clinical course and the duration of viral shedding.

Treatment includes stool softeners, analgesia, and one of the following regimens:

- acyclovir 200 mg 5 times/day or 400 mg three times daily for 7-10 days;
- famciclovir 250 mg three times daily for 7-10 days;
- valacyclovir 1 gram twice daily all for 7-10 days.

These reduce viral shedding and enhance healing.⁴¹

Molluscum contagiosum is caused by a pox virus, and is transmitted via direct contact. These flattened round umbilicated lesions develop 3-6 weeks after exposure. Treatment is via surgical removal or cryotherapy.⁴⁰

Foreign Bodies and Rectal Trauma

Colorectal foreign bodies encountered in the ED range from bottles, vibrators, fruits and vegetables, light bulbs, candles, balls, dildos, rings, shot glasses, metal objects, rubber puppets, plastic cigar cases, flashlights, bull horns, and other objects.^{10,45,46,47} Their presence generally is a result of auto-eroticism or sexual stimulation device use, although assault, accidental insertion, self-treatment for pruritus ani, and drug smuggling are possible motivating factors as well. Prisoners have been known to hide weapons in their rectum. A history may be difficult to obtain due to embarrassment of the patient, and the history may be fabricated. One study indicated the median time from injury to seeking care was between 2 and 3 days.⁴⁸

There have been reports of psychiatric patients inserting sharp objects into their rectum in order to injure the clinician performing a rectal examination.¹⁰ Rectal perforation has been reported in a female who had been fistled while intoxicated and did not report or recall the anal injury.⁵⁰ Apart from ensuring that the clinician remains non-judgmental and supportive, the possibility of assault should be considered when dealing with rectal injuries or a foreign body.

Patients may present with relatively minor complaints such as constipation, pain or rectal bleeding, abdominal discomfort, or more serious complications such as perforation, hemorrhage, deep mucosal tears, abscess, or peritonitis. High-lying foreign bodies are considered to be above the rectosigmoid junction and not generally palpable on digital rectal examination, whereas low-lying ones are those below and often palpable by digital examination. Injuries above the peritoneal reflection can result in intraperitoneal perforation, with fever, leukocytosis, abdominal pain, and peritonitis.

Diagnosis may be confirmed by plain abdominal radiographs both to evaluate the object and to look for pneumoperitoneum.⁵¹ Rectal contrast can be used to outline a

radiolucent foreign body. If a CT with rectal contrast study is performed to evaluate for rectal perforation, a water-soluble contrast agent should be used, rather than risking extravasation with barium. If the object could be sharp, radiography may be performed first, and then anoscopy employed instead of a digital rectal examination.

A range of techniques and approaches have been described to extract rectal foreign bodies. Simple enemas have been successful in extracting an anally inserted vibrator.⁵² Anal dilatation and digital extraction, surgical forceps, and Foley catheters passed around the foreign body with balloon inflation to assist in removal have all been employed. Anal block with local infiltration of 1% lidocaine or 0.5% bupivacaine to relax the anal sphincter or procedural sedation may be necessary, especially with proctosigmoidoscopy. Involuntary spasm may prevent successful removal. Bimanual pressure on the anterior abdominal wall with the patient in lithotomy position, grasping with forceps under anoscopic vision, and magnets for metal objects have all been described.¹⁰ For patients with foreign bodies above the rectosigmoid junction, or those with suspected perforation, emergent surgical consultation should be obtained. Such patients may require emergency laparotomy with enterotomy for removal of the foreign body, debridement of devitalized tissue, and colostomy depending upon findings at surgery.⁵³

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Physician CME Questions

1. Which of the following is/are considered risk factors in the development of hemorrhoids?
 - A. narcotic-induced constipation
 - B. portal hypertension
 - C. anoreceptive intercourse
 - D. increased alcohol consumption
 - E. all of the above
2. Third-degree internal hemorrhoids require surgical consultation in the ED.
 - A. true

- B. false
3. Which of the following is a contraindication to excision of a thrombosed external hemorrhoid in the emergency department?
- elderly patient
 - those with prior hemorrhoid excision
 - patients with portal hypertension
 - lung cancer patient not currently on immunosuppressant treatment
4. What symptom is most specific to the presence of an anal fissure?
- painless rectal bleeding
 - rectal itching
 - painful rectal bleeding
 - diarrhea
5. Which of the following statements concerning anal fissures is *not true*?
- Child abuse must be considered in a child presenting with an anal fissure.
 - The majority of anal fissures occur in the anterior midline position.
 - The most significant discomfort occurs during defecation.
 - In the presence of multiple anal fissures, systemic illnesses including HIV, IBD, and STDs should be considered.
6. Which type of anorectal abscess warrants ED surgical consultation?
- perirectal
 - intersphincteric
 - supralelevator
 - B and C
7. Children presenting with rectal prolapse should be referred for outpatient evaluation concerning which of the following conditions?
- Down syndrome
 - Crohn's disease
 - leukemia
 - cystic fibrosis
8. What is the recommended treatment of anorectal gonorrhea in a penicillin-allergic patient?
- vancomycin IV
 - azithromycin 2 gram PO once
 - doxycycline 100 mg twice daily x 7 days
 - ciprofloxacin 500 mg twice daily x 3 days
9. Pruritus ani is the most common anorectal condition.
- true
 - false
10. Which of the following is true of pilonidal abscesses?
- Antibiotics are recommended for routine treatment.
 - They most often occur lateral to midline.
 - They are most common in men with significant amount of body hair.

- D. Recurrent infections are a contraindication to incision and drainage in the ED.

Correction

In the March 22, 2014, issue, Table 2 contains an error. The correct information for blood lactate is: $> 5 = 1$ point; $\leq 5 = 0$. We apologize for the error, and the online version of the article has been corrected on our web site.

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Emergency Medicine Reports

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Upon completion of this educational activity, participants should be able to:

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- apply state-of-the-art diagnostic and therapeutic techniques to patients with the particular medical problems discussed in the publication;
- discuss the differential diagnosis of the particular medical problems discussed in the publication;
- explain both the likely and rare complications that may be associated with the particular medical problems discussed in the publication.

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Anorectal Emergencies

Hemorrhoids

Type	Physiology/Appearance	Treatment
Internal		
First degree	Project into anal canal; however, no prolapse	Conservative management*
Second degree	+Prolapse Spontaneously reduce	Conservative management +/- Surgery follow up
Third degree	+Prolapse Require manual reduction	Reduction in ED Conservative management +Surgery follow-up
Fourth degree	+Prolapse Non-reducible and concern for strangulation	Surgery consultation in ED
External		
Non-thrombosed	Abnormal perirectal tissue; however, normal in tissue appearance	Conservative management
Thrombosed	Enlarged, painful, and/or bluish perirectal mass	ED excision**
*Conservative management including: high-fiber diet, adequate hydration, stool softeners, and sitz baths		
**If presenting with acute thrombosed hemorrhoid within 48-72 hours		

Conservative Regimen for Hemorrhoids and Anal Fissures

- High-fiber diet
 - PO hydration
 - Stool softeners
 - Topical steroids (hydrocortisone)
 - Sitz baths (warm or cool)
- * May consider adding topical nitrates or calcium channel blockers to regimen if no relief in attempt to avoid surgical intervention

Anorectal Abscesses

Location/Type	Description/Exam/Diagnosis	Treatment
Perirectal (most common)	Pain around anal region worse with sitting or bowel movement. Localized swelling or fluctuance around anal region on examination.	Incision and drainage avoiding the anal sphincter*
Ischiorectal	Pain in buttocks worse with sitting. Mass/induration to buttocks may be appreciated on physical examination.	Incision and drainage avoiding the anal sphincter*
Intersphincteric	Pain in anal canal worse with bowel movement. Difficult to observe; however, may be palpated on digital examination.	Surgical consultation
Supralelevator (least common)	Most difficult to diagnosis with physical examination. Consider anoscope or further imaging, i.e., CT.	Surgical consultation
*If concern for extension of abscess, further imaging or surgical consultation is warranted prior to I&D.		

External Hemorrhoids



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Anal Fissure



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Causes of Secondary Pruritus Ani

Atopic dermatitis	Contact dermatitis
Candida	Non-sexual bacterial:
Crohn's disease	<i>Corynebacterium</i>
Psoriasis	<i>minutissimum</i> , staph, strep
Diabetes mellitus	Hidradenitis suppurativa
Seborrheic dermatitis	Scleroderma
Condyloma acuminata	Lichen planus
Fissures	Radiation dermatitis
Pediculosis pubis	Hemorrhoids, skin tags, fistula in ano
Erythema multiforme	Pinworm
Herpes simplex/zoster	Scabies
Iron deficiency anemia	Dermatitis herpetiformis
Mycosis fungoides	Cimicosis/bed bugs
Uremia	Leukemia/lymphoma
	Carcinoma (squamous, basal cell, Bowen and Paget disease)
	Cholestasis

Some Suggested Therapies for Anorectal Sexually Transmitted Diseases

Disease	Suggested Therapy
<i>Neisseria gonorrhoea</i>	Ceftriaxone 250 mg IM plus doxycycline 100 mg twice daily for 7 days
<i>Chlamydia trachomatis</i>	Ofloxacin 300 mg twice daily for 7 days or Doxycycline 100 mg twice daily for 1 week, and Ceftriaxone 250 mg IM or Levofloxacin 500 mg daily for 7 days
Primary and secondary syphilis	Benzathine penicillin 2.4 million units IM Tetracycline 500 mg four times daily for 14 days or Doxycycline 100 mg twice daily for 14 days or Azithromycin/erythromycin for penicillin allergy
Lymphogranuloma venereum	Doxycycline 100 mg twice daily for 21 days or Erythromycin 500 mg four times daily for 21 days or Azithromycin 500 mg daily for 21 days
Herpes simplex	Acyclovir 200 mg 5 times/day or 400 mg three times daily for 7-10 days Famciclovir 250 mg three times daily for 7-10 days Valacyclovir 1 gram twice daily all for 7-10 days
Condyloma acuminata	Topical trichloroacetic acid 80-90% Podophyllin, cryotherapy Laser treatment/imiquimod
Chancroid	Ceftriaxone 250 mg IM or Azithromycin 1 gram orally or Erythromycin base 500 mg 3 times daily for 7 days or Ciprofloxacin 500 mg twice daily for 3 days

Pilonidal Abscess



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Rectal Prolapse



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Foreign Body



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Supplement to *Emergency Medicine Reports*, May 4, 2014: "Anorectal Emergencies." **Authors:** Jonathan Glauser, MD, FACEP, Associate Professor, Emergency Medicine, Case Western Reserve University; Faculty, Residency Program, MetroHealth Medical Center, Cleveland, OH; and Jason Katz, MD, Department of Emergency Medicine, MetroHealth Medical Center, Cleveland, OH. *Emergency Medicine Reports' "Rapid Access Guidelines."* Copyright © 2014 AHC Media LLC, Atlanta, GA. **Editors:** Sandra M. Schneider, MD, FACEP, and J. Stephan Stapczynski, MD. **Editorial Director:** Lee Landenberger. **Executive Editor:** Shelly Morrow Mark. **Managing Editor:** Leslie Hamlin. For customer service, call: 1-800-688-2421. This is an educational publication designed to present scientific information and opinion to health care professionals. It does not provide advice regarding medical diagnosis or treatment for any individual case. Not intended for use by the layman.