



## Haemorrhoids

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# BMJ Best Practice

## Hemorrhoids

The right clinical information, right where it's needed



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## Summary

- ◇ Hemorrhoids are vascular-rich connective tissue cushions located within the anal canal.
- ◇ Internal hemorrhoids lie proximal to the dentate line in the anal canal, whereas external hemorrhoids are located distal to the dentate line.
- ◇ Hemorrhoidal disease presents as painless rectal bleeding or sudden onset of perianal pain with a tender palpable perianal mass.
- ◇ Diagnosis is confirmed with visualization of the protruding tissue or anoscopic visualization.
- ◇ Treatment includes increasing dietary fiber, rubber band ligation, infrared photocoagulation, sclerotherapy, or surgical hemorrhoidectomy.
- ◇ Complications include recurrence or worsening of symptoms, excessive bleeding, nonreducible prolapse, and, rarely, pelvic sepsis.

## Definition

Hemorrhoidal cushions are normal anatomic structures located within the anal canal, usually occupying the left lateral and right anterior and posterior positions. As they enlarge, they can protrude outside the anal canal causing symptoms.[Fig-2] [Fig-3]

## Epidemiology

The exact incidence of hemorrhoidal disease is difficult to quantify due to differences in healthcare access. In the US the prevalence is approximately 4%.[1] and is more common in white patients than in black patients, with presentation peaking between the ages of 45 and 65 years. Since the second half of the 20th century, there appears to be an unexplained decrease in the prevalence of symptomatic hemorrhoidal disease in both the US and England.[2]

## Etiology

The primary etiology is believed to be excessive straining due to either chronic constipation or diarrhea. Repetitive or prolonged straining causes downward stress on the vascular hemorrhoidal cushions, leading to the disruption of the supporting tissue elements with subsequent elongation, dilation, and engorgement of the hemorrhoidal tissues.[3] [4] Other conditions can contribute to the formation of hemorrhoids: an increase in intra-abdominal pressure can be caused by pregnancy or ascites; the presence of space-occupying lesions within the pelvis may cause a concomitant decrease in vascular return and increase in anal vascular engorgement.[5]

## Pathophysiology

Hemorrhoids are a normal anatomic and functional component of the anal canal; they become pathologic and are termed hemorrhoidal disease only when they cause symptoms. As the patient strains at stool, the hemorrhoids are pulled lower into the anal canal. As the vascular cushions engorge, the thin epithelial lining is easily torn, which causes bleeding. This is commonly seen as bright blood on cleansing, but can also be seen in the bowl. The hemorrhoids can enlarge to the point that they protrude from the anal canal and can cause a sensation of incomplete evacuation or require manual reduction following a bowel movement.

External hemorrhoids commonly cause symptoms of pruritus or a feeling of inadequate cleaning following a bowel movement. These hemorrhoidal tissues can also become engorged and clots can form, causing a thrombosed external hemorrhoid. This is commonly preceded by a period of excessive straining. The patient experiences the sudden onset of perianal pain and a tender palpable lesion forms adjacent to the anal canal on the anal margin.

## Classification

### External hemorrhoids

Hemorrhoids that are located in the distal anal canal, distal to the dentate line, and covered by sensate anoderm or skin.

### Internal hemorrhoids (grade 1-4)

Hemorrhoids that originate proximal to the dentate line and covered by insensate transitional epithelium.

- Grade 1 - protrusion is limited to within the anal canal.
- Grade 2 - protrudes beyond the anal canal but spontaneously reduces on cessation of straining.
- Grade 3 - protrudes outside the anal canal and reduces fully on manual pressure.
- Grade 4 - protrudes outside the anal canal and is irreducible.

This grading of internal hemorrhoids is only a reflection of the degree of prolapse but is not a measure of either the disease severity or of the size of hemorrhoidal prolapse.

## Primary prevention

A diet rich in fiber can help prevent constipation, which is the main risk factor for hemorrhoids. The daily recommended consumption is 25 to 30 g of fiber either in the form of high-fiber foods or commercial fiber supplements.<sup>[8]</sup> Concomitant intake of adequate hydration should help in avoiding constipation.

## Secondary prevention

A diet rich in fiber can shorten the GI transit time, increases stool weight, and helps prevent constipation, which is the main risk factor for hemorrhoids. A daily supplement of 25 to 30 g of either high fiber foods or commercial fiber supplements along with increased hydration improves constipation and hence hemorrhoidal symptoms

## Case history

### Case history #1

A 42-year-old man presents to his primary care physician complaining of a 3-month history of lower intestinal bleeding. He describes the bleeding as painless, bright blood appearing on the tissue following a bowel movement. He has had 2 episodes recently where blood was visible in the toilet bowl following defecation. He denies any abdominal pain and any family history of GI malignancy. Physical exam reveals a healthy man with the only finding being bright blood on the examining finger following a digital rectal exam.

### Case history #2

A 28-year-old woman presents complaining of rectal pain of 3 days' duration. She states that on the day before the onset of symptoms she had been moving boxes at her home. She describes the pain as sharp and present constantly, but worse with bowel movements or sitting. She denies any fevers or chills or perianal discharge. Physical exam reveals a 2-cm, painful, bluish lesion adjacent to the anal canal.

### Other presentations

Hemorrhoids can also present with complaints of excess tissue surrounding the anal canal, causing pruritus or difficulty in cleaning following a bowel movement.

## Step-by-step diagnostic approach

A characteristic feature of symptomatic internal hemorrhoids is painless, bright red bleeding or a protrusion from the rectum, which often follows a bowel movement. Pain may accompany complication of hemorrhoids. The presence of altered bowel habits (diarrhea and/or constipation), and passage of blood and clots (especially if persistent) should arouse suspicion of other potential diagnoses such as anal fissure, anal fistula, proctitis, or colorectal cancer.

### Physical exam

Physical exam of the anorectal canal should be performed in the left lateral position (Symes), the prone jack-knife position, or the lithotomy position. Especially if pain is the chief complaint, examination should be approached very carefully. It begins with a visual inspection of the anal margin by gently spreading the buttocks, looking for external hemorrhoids, skin tags, or other anal pathology such as anal fissures, fistulas, or perianal masses. A prolapse may be made more visible if the patient is asked to strain. Assessment of the type of prolapse should allow the examiner to distinguish a hemorrhoidal prolapse (radial pattern) from a rectal prolapse (concentric pattern). Unless the patient is in a lot of pain, a digital exam and an anoscopic exam can then be performed with either a lighted anoscope or an external light source.

The anoscopic exam is a simple and safe technique, which enables a full view of the anal canal and all of the hemorrhoidal tissue. The alternative technique of using a retroflexed flexible endoscope is technically more demanding and requires a higher skill level.

### Endoscopy

It is imperative to exclude more serious or concomitant conditions of the colon and rectum (such as inflammatory bowel disease or colon cancer), especially in the presence of suspicious symptoms such as altered bowel habit or



passage of clots and/or mucus, although it is safe to initiate first-line treatment for any obvious hemorrhoids. Further investigations to exclude such conditions may include a flexible endoscopy, which can be either a limited (flexible sigmoidoscopy, performed following 1-2 enemas) or a full colonoscopy (after a full bowel preparation), depending on the patient's age and risk profile.

## **Laboratory**

A CBC can be ordered if there is concern that the patient has experienced significant and prolonged rectal bleeding and if signs of anemia are present. If microcytic or hypochromic anemia is detected, further investigations such as endoscopy to determine the cause are warranted.

A stool test for occult heme is usually unnecessary if visible bleeding is reported. However, if no significant hemorrhoidal tissue is seen on examination and there is frank or occult evidence of bleeding, further investigations such as endoscopy are warranted to determine the source of bleeding.

## **Risk factors**

### **Strong**

#### **age between 45 and 65 years**

- Incidence of hemorrhoids peaks between 45 and 65 years of age and declines after age 65 years.[1]

#### **constipation**

- The presence of chronic constipation associated with straining at stool is associated with the repetitive elongation of the hemorrhoidal cushions and disruption of the supporting elements. This leads to the enlargement and engorgement of the hemorrhoidal tissue.[5]

#### **pregnancy or space-occupying pelvic lesion**

- Pregnancy is often associated with the development of hemorrhoidal symptoms that develop progressively throughout the pregnancy.[6] Pathologic pelvic lesions, such as large ovarian cysts, can also encourage the development of hemorrhoidal symptoms. In both situations, there is increase in intra-abdominal/pelvic pressure with concomitant decrease in venous return causing increased anal vascular engorgement.

### **Weak**

#### **hepatic insufficiency**

- There is little evidence that hepatic insufficiency or portal HTN contributes to the formation of hemorrhoids,[7] but these conditions can result in rectal varices.

#### **ascites**

- An increase in intra-abdominal pressure can be a contributing risk factor.

## **History & examination factors**

### **Key diagnostic factors**

#### **rectal bleeding (common)**

- Most common symptom of hemorrhoids. Usually bright bleeding in association with defecation or straining at stool.

**perianal pain/discomfort (common)**

- Can be a feature of uncomplicated internal or external hemorrhoids. Severe in thrombosed external hemorrhoids; may be associated with feeling of incomplete evacuation.

**Other diagnostic factors****anal pruritus (common)**

- May result from internal hemorrhoid prolapse-associated moisture or fecal incontinence, or result from the difficulty to maintain hygiene with extensive external hemorrhoids.

**tender palpable perianal lesion (common)**

- Can form adjacent to the anal canal on the anal margin when there is acute thrombosis.

**anal mass (common)**

- A palpable anal mass may be present with prolapsing hemorrhoids.

**Diagnostic tests****1st test to order**

Test	Result
<b>anoscopic exam</b> <ul style="list-style-type: none"> <li>• The most specific and conclusive diagnostic test for hemorrhoids.</li> </ul>	<b>hemorrhoids</b>
<b>colonoscopy/flexible sigmoidoscopy</b> <ul style="list-style-type: none"> <li>• Used to exclude other more serious pathology such as inflammatory bowel disease or cancer. In the presence of suspicious symptoms, such as altered bowel habit or passage of clots and/or mucus, lower GI endoscopy is performed. The definitive test is colonoscopy. If flexible sigmoidoscopy is chosen, in high-risk patients (e.g., family history or bowel cancer) it should be combined with a barium enema to assess proximal colon.</li> </ul>	<b>usually normal; may reveal other pathologies</b>
<b>CBC</b> <ul style="list-style-type: none"> <li>• Ordered only if there is concern that the patient has experienced significant prolonged rectal bleeding and signs of anemia are present.</li> </ul>	<b>may demonstrate microcytic/hypochromic anemia</b>
<b>stool for occult heme</b> <ul style="list-style-type: none"> <li>• Unnecessary unless no significant hemorrhoidal tissue is seen on examination; further evaluation deemed unnecessary if the results are negative.</li> </ul>	<b>positive</b>

## Differential diagnosis

Condition	Differentiating signs / symptoms	Differentiating tests
<b>Anal fissure</b>	<ul style="list-style-type: none"> <li>Anal fissures are associated with painful bleeding on defecation and possibly a sentinel skin tag (sometimes reported by the patient as a "painful hemorrhoid"). Fissures are seen as linear tears in the anal mucosae, most commonly in the posterior midline of the anal canal.</li> </ul>	<ul style="list-style-type: none"> <li>Physical exam.</li> </ul>
<b>Crohn disease</b>	<ul style="list-style-type: none"> <li>Crohn disease affecting the large bowel can present with rectal bleeding and is associated with diarrhea rather than constipation. Family history of inflammatory bowel disease is often present.</li> </ul>	<ul style="list-style-type: none"> <li>Endoscopy findings highly variable, depending on disease activity. Characteristically shows "skip areas" with areas of disease with intervening areas of normal mucosa. Usually most severe in the cecum and right colon, with rectum often spared.</li> </ul>
<b>Ulcerative colitis</b>	<ul style="list-style-type: none"> <li>Ulcerative colitis commonly presents with rectal bleeding and is associated with diarrhea rather than constipation. Family history of inflammatory bowel disease is often present.</li> </ul>	<ul style="list-style-type: none"> <li>Endoscopy reveals diffuse inflammation and ulceration in cases of acute ulcerative colitis.</li> </ul>
<b>Colorectal cancer</b>	<ul style="list-style-type: none"> <li>History of altered bowel habits, anemia, colonic polyps, and positive family history suggest colorectal cancer.</li> </ul>	<ul style="list-style-type: none"> <li>Endoscopy may reveal mass, stricture, and obstruction. Blood tests commonly reveal anemia.</li> </ul>
<b>Anal fistula</b>	<ul style="list-style-type: none"> <li>Commonly bleeding with a history of a preceding abscess, with continued intermittent bloody/purulent drainage. Visualized as a punctuate opening on the anal margin adjacent to the anal canal.</li> </ul>	<ul style="list-style-type: none"> <li>Physical exam.</li> </ul>
<b>Rectal prolapse</b>	<ul style="list-style-type: none"> <li>Usually presents as protruding mass per rectum especially with straining. May be associated with mucus or blood-stained discharge, pain, and or fecal incontinence.</li> </ul>	<ul style="list-style-type: none"> <li>Physical exam. A defecogram may help distinguish between mucosal prolapse and a full thickness rectal prolapse. Examination under anesthesia (EUA) may be required to confirm and assess severity.</li> </ul>

## Step-by-step treatment approach

The main aim of treatment is relief of symptoms. The treatment depends on whether the symptomatic hemorrhoids are internal, external, or a combination of both. Grading of internal hemorrhoids does not reflect disease severity or size of prolapse but may aid in choosing treatment method. All patients should be offered information about lifestyle and dietary modification on diagnosis of hemorrhoids.<sup>[10]</sup>

### Mild intermittent bleeding

If the patient presents with mild intermittent bleeding, diet and lifestyle modifications to prevent constipation are usually all that are required to treat the hemorrhoids (grade 1). Topical corticosteroids can be used for occasional short-term use to soothe pruritic symptoms, but prolonged use should be avoided because they can cause atrophy of the anal skin.

A thorough evaluation including endoscopic exam is warranted to exclude a more serious diagnosis.

### Internal hemorrhoids

Rubber band ligation, infrared photocoagulation, sclerotherapy, hemorrhoid arterial ligation, and stapled hemorrhoidopexy can all be used for mild prolapsing internal hemorrhoids (grade 2); the most simple and effective method of managing the excess tissue is with the application of rubber bands.<sup>2[C]Evidence 3[C]Evidence 4[C]Evidence</sup> Infrared photocoagulation and sclerotherapy may be more suitable for hemorrhoids that are too small for rubber band ligation (which may include grade 1-2 hemorrhoids).

Sclerotherapy is superior to infrared photocoagulation which requires multiple treatment sessions.

Sclerotherapy involves injecting a chemical agent directly into the hemorrhoidal tissue to cause local tissue destruction and scarring of the hemorrhoidal tissue.

Infrared photocoagulation uses infrared radiation applied directly to the hemorrhoid, which causes coagulation, scarring, and subsequent fixation of the internal hemorrhoidal tissue. Stapled hemorrhoidopexy is superior to rubber band ligation for early grade (grade 2 to 3) internal hemorrhoids. Surgical hemorrhoidectomy can also be used when these treatment options have failed.

For prolapsing grade 3 internal hemorrhoids rubber band ligation is still an effective first-line treatment method but the long-term results are inferior to those of stapled hemorrhoidopexy. For grade 4 internal hemorrhoids surgical hemorrhoidectomy is the most effective first-line approach.

### External or combined internal and external hemorrhoids

For external hemorrhoids, or combined internal and external hemorrhoids with severe symptoms, surgical excision may be the only effective treatment option. This involves excision under either a general or regional anesthetic. Asymptomatic external hemorrhoids do not warrant invasive treatment but may be observed while the patient follows dietary and lifestyle modification. In thrombosis of external hemorrhoids, minimally invasive procedures such as de-roofing may be required for symptom relief, which can be done under topical, regional, or general anesthetic.

The recurrence of symptoms following surgical hemorrhoidectomy is very rare, but surgical hemorrhoidectomy is associated with more complications and pain than more conservative procedures.<sup>[11] 1[C]Evidence</sup>

## Treatment details overview

Consult your local pharmaceutical database for comprehensive drug information including contraindications, drug interactions, and alternative dosing. ( see [Disclaimer](#) )

Acute (summary)		
Patient group	Tx line	Treatment
all patients at presentation	1st	dietary and lifestyle modification
■ grade 1 hemorrhoids	adjunct	topical corticosteroids
■ grade 2 prolapsing internal hemorrhoids	plus	rubber band ligation or sclerotherapy or infrared photocoagulation or hemorrhoid arterial ligation or stapled hemorrhoidopexy
■ grade 3 prolapsing internal hemorrhoids	plus	rubber band ligation
■ grade 4 internal, external, or mixed internal and external hemorrhoids	plus	surgical hemorrhoidectomy

Ongoing (summary)		
Patient group	Tx line	Treatment
treatment failure of rubber band ligation, infrared photocoagulation, sclerotherapy, transanal hemorrhoidal dearterialization, or stapled hemorrhoidopexy	1st	surgical hemorrhoidectomy

# Treatment options

## Acute

Patient group	Tx line	Treatment
all patients at presentation	1st	<p><b>dietary and lifestyle modification</b></p> <ul style="list-style-type: none"> <li>» Lifestyle and dietary modification should be encouraged on establishing the diagnosis of hemorrhoids. Straining or spending excessive time at stool should be discouraged. Moist, gentle cleaning following a bowel movement is advised.</li> <li>» Constipation can be avoided by adding fiber and fluids to the diet; consuming 25 to 30 g of fiber daily is recommended, either with high-fiber foods or with commercial fiber supplements. These measures alone may be all that is necessary for those patients with mild symptoms.<a href="#">[8]</a></li> <li>» A thorough evaluation including endoscopic exam is warranted to exclude a more serious diagnosis.</li> </ul>
grade 1 hemorrhoids	adjunct	<p><b>topical corticosteroids</b></p> <ul style="list-style-type: none"> <li>» If the patient presents with mild intermittent bleeding, diet and lifestyle modifications to prevent constipation are usually all that are required to treat the hemorrhoids.</li> <li>» Topical corticosteroid medications can be used for occasional short-term use to alleviate any pruritic symptoms, but prolonged use should be avoided because they can cause atrophy of the anal skin. Creams and ointments are generally used for external hemorrhoids, and suppositories are generally used for internal hemorrhoids.</li> </ul> <p><b>Primary options</b></p> <ul style="list-style-type: none"> <li>» <b>hydrocortisone rectal:</b> (1 to 2.5%) apply twice daily for a maximum of 5-7 days; 25 mg (1 suppository) into the rectum twice daily for 14 days</li> </ul>
grade 2 prolapsing internal hemorrhoids	plus	<p><b>rubber band ligation or sclerotherapy or infrared photocoagulation or hemorrhoid arterial ligation or stapled hemorrhoidopexy</b></p> <ul style="list-style-type: none"> <li>» Rubber band ligation is the most effective treatment.<a href="#">2[C]Evidence</a> Infrared photocoagulation and sclerotherapy can also be used. Sclerotherapy is superior to infrared photocoagulation which requires multiple treatment sessions.<a href="#">3[C]Evidence</a> <a href="#">4[C]Evidence</a></li> <li>» Rubber band ligation is performed with the aid of an anoscope. <a href="#">[Fig-1]</a> A rubber band is placed on the redundant hemorrhoidal tissue, with care being taken</li> </ul>

## Acute

## Patient group

## Tx line

## Treatment

to place the bands above the dentate line. [Fig-2] The tissue contained in the band necroses and is sloughed in approximately 1 week, with good success rates for controlling hemorrhoidal disease. [Fig-3] [12] Patients can experience transient bleeding or, extremely rarely, septic events. Anticoagulant medications should be withheld before performing the procedure, and any bleeding after the procedure should be promptly evaluated.

» Sclerotherapy involves injecting a chemical agent directly into the hemorrhoidal tissue to cause local tissue destruction and scarring of the hemorrhoidal tissue. With the aid of an anoscope, 2 to 3 mL of a sclerosant (5% phenol, 5% quinine or urea) is injected into the submucosa of the hemorrhoidal apex. [13]

» Infrared photocoagulation uses infrared radiation applied directly to the hemorrhoid, which causes coagulation, scarring, and subsequent fixation of the internal hemorrhoidal tissue. A commercially available device is used to apply the radiation to the apex of the hemorrhoid, using short pulses of energy to create a controlled thermal injury, which leads to scarring and cessation of bleeding. Multiple sessions are generally required to successfully ablate the tissue. [13]

» Transanal hemorrhoidal dearterialization (THD) utilizes a custom-designed proctoscope coupled with a Doppler transducer to identify and ligate the terminal branches of superior rectal artery above the dentate line. Commonly done under a short general anesthetic and multiple ligations may be required. [14]

» The procedure for prolapsing hemorrhoids, or stapled hemorrhoidopexy, involves inserting and firing a circular stapler to perform a circumferential resection. This process does not remove the hemorrhoidal tissue, but returns it to a more anatomic position within the anal canal, thereby relieving symptoms with less pain than a surgical hemorrhoidectomy. [15] However, the rate of recurrence is higher than with conventional hemorrhoidectomy. [16] [17] [18] [19] 5[C] Evidence

#### Primary options

» rubber band ligation

#### Secondary options

» sclerotherapy

#### Tertiary options

## Acute

Patient group	Tx line	Treatment
<p>■ <b>grade 3 prolapsing internal hemorrhoids</b></p>	<p><b>plus</b></p>	<p>» infrared photocoagulation</p> <p><b>OR</b></p> <p>» hemorrhoid arterial ligation</p> <p><b>OR</b></p> <p>» stapled hemorrhoidopexy</p> <p><b>rubber band ligation</b></p> <p>» With the aid of an anoscope [Fig-1] a rubber band is placed on the redundant hemorrhoidal tissue, with care being taken to place the bands above the dentate line. [Fig-2] The tissue contained in the band necroses and is sloughed in approximately 1 week, with good success rates for controlling hemorrhoidal disease. [Fig-3] 2[C]Evidence Alternatively, rubber bands can be placed at the same time as a colonoscopy.[12]</p> <p>» Patients can experience transient bleeding or, extremely rarely, septic events; anticoagulation medications should be withheld before performing the procedure, and any bleeding after the procedure should be promptly evaluated.</p> <p><b>Primary options</b></p> <p>» rubber band ligation</p> <p><b>Secondary options</b></p> <p>» transanal hemorrhoidal dearterialization</p> <p><b>OR</b></p> <p>» stapled hemorrhoidopexy</p> <p><b>Tertiary options</b></p> <p>» surgical hemorrhoidectomy</p>
<p>■ <b>grade 4 internal, external, or mixed internal and external hemorrhoids</b></p>	<p><b>plus</b></p>	<p><b>surgical hemorrhoidectomy</b></p> <p>» Surgical hemorrhoidectomy is the best treatment for patients with grade 4 internal hemorrhoids, combined internal and external hemorrhoids, or for any patient who has failed more conservative treatment options for their internal hemorrhoids. 1[C]Evidence The recurrence of symptoms following surgical hemorrhoidectomy is very rare, but is associated with more complications and pain than more conservative procedures.[11]</p>



## Ongoing

Patient group	Tx line	Treatment
treatment failure of rubber band ligation, infrared photocoagulation, sclerotherapy, transanal hemorrhoidal dearterialization, or stapled hemorrhoidopexy	1st	<p><b>surgical hemorrhoidectomy</b></p> <p>» Surgical hemorrhoidectomy is the best treatment for patients with combined internal and external hemorrhoids or for any patient who has failed more conservative treatment options for their internal hemorrhoids. <b>1[C]Evidence</b> The recurrence of symptoms following surgical hemorrhoidectomy is very rare, but is associated with more complications and pain than more conservative procedures.<b>[11]</b></p>

## Recommendations

### Monitoring

Rectal bleeding is a characteristic feature of symptomatic hemorrhoids, which should also be monitored. Patients with continuous bleeding or those who develop symptomatic anemia require early endoscopic evaluation (colonoscopy) to eliminate other proximal pathology prior to interventional treatment for hemorrhoids. Usually following treatment patients are reviewed to confirm wound healing and symptom resolution. Long-term follow-up is unnecessary unless there are any treatment-related complications or recurrence of persistent symptoms, especially sinister GI symptoms (e.g., bleeding, anemia, alteration in bowel habits, abdominal pain, weight loss) in which case patients would require re-evaluation including colonoscopy.

### Patient instructions

Moist, gentle cleaning following a bowel movement is advised to minimize anal irritation.

Patients are advised to avoid excessive straining of stools and to avoid sitting on the toilet for long periods of time.

Constipation can be a causative factor in hemorrhoid formation, which can be avoided by adding fiber and fluids to the diet; consuming 25 to 30 g of fiber daily is recommended, either with high-fiber foods or with commercial fiber supplements.<sup>[8]</sup>

Prolonged use of topical corticosteroids should be avoided because they can cause wasting of the skin around the anus.

Following rubber band ligation, patients are advised to manage pain with simple analgesics (such as acetaminophen), to avoid constipation (low-dose laxatives or stool softeners are often prescribed), to eat a high fiber diet, and to keep themselves hydrated.

For the management of pain following surgical haemorrhoidectomy, patients are advised to use regular simple analgesics, such as acetaminophen or ibuprofen, and to use stool softeners daily to avoid constipation. Chemical sphincter relaxants (e.g., nitroglycerin) applied to the anus confer some benefit. Metronidazole may also be prescribed.

## Complications

Complications	Timeframe	Likelihood
<b>anemia from continuous/excessive bleeding</b>	<b>short term</b>	<b>medium</b>
<p>Rectal bleeding is a characteristic feature of symptomatic hemorrhoids. At times the bleeding can be excessive or massive, or may be the etiology of symptomatic anemia, especially in patients taking oral anticoagulation medications.<sup>[22]</sup></p> <p>Patients with continuous bleeding or those who develop symptomatic anemia require early endoscopic evaluation (colonoscopy). This evaluation is followed by rubber band ligation or surgical excision after more proximal pathology is eliminated.</p>		
<b>thrombosis</b>	<b>short term</b>	<b>medium</b>

Complications	Timeframe	Likelihood
<p>Acute thrombosis of a hemorrhoid manifests as the sudden onset of perianal pain and the appearance of a tender nodule adjacent to the anal canal. The thrombosis often follows a period of vigorous activity.</p> <p>The treatment of an acute thrombosis involves the relief of pain, which is the predominant symptom. Nonsurgical treatment consists of warm tub soaks. Mild oral analgesia and stool softeners can be offered. The thrombus will be gradually resorbed over 1 to 2 weeks.</p> <p>Surgical deroofting or excision can be considered when symptoms are severe; this will also result in faster resolution of symptoms.[23]</p>		
<b>incarceration</b>	<b>short term</b>	<b>low</b>
<p>Prolapsing hemorrhoidal tissue can become incarcerated and be unable to be reduced into the anal canal causing severe pain.</p> <p>The treatment for incarcerated hemorrhoids is traditionally urgent surgical hemorrhoidectomy. Adjuncts to reduce the swelling and to facilitate conservative excision include hyaluronidase injection into the swollen hemorrhoidal tissue.</p>		
<b>fecal incontinence</b>	<b>long term</b>	<b>medium</b>
<p>Considerable risk of some degree of impaired continence, usually to flatus (52%) and liquid stool (40%) has been reported following surgical hemorrhoidectomy.[21] Severe incontinence is rare. Females at greater risk. Grade of hemorrhoids did not seem to influence. A systematic review did not find any similar complication after rubber band ligation.[21]</p>		
<b>pelvic sepsis</b>	<b>long term</b>	<b>low</b>
<p>Clinically disproportionate rectal pain, urinary retention, abdominal pain, and pyrexia are often warning signs.</p> <p>Technically difficult procedures, high and incomplete staple line with full thickness excision should raise suspicion.</p> <p>Immunocompromised patients including people with diabetes, those on long-term corticosteroids may be at risk.</p> <p>Imaging (plain CXR, AXT, or CT scan) may reveal free air in the peritoneum or retroperitoneum, and may be diagnostic.</p> <p>High index of suspicion and prompt treatment with systemic broad spectrum antibiotics and urgent surgical evaluation are warranted.</p>		
<b>anal stenosis</b>	<b>long term</b>	<b>low</b>
<p>Increased incidence with extensive, circumferential excision. Severe longstanding stenosis is rare.</p> <p>Meticulous attention to technical details, including preservation of skin bridges in between excised pedicles, should prevent occurrence of stenosis.</p> <p>Minor fibrotic stenosis is treated by dilation in outpatient clinics followed by self-dilation. Significant stenosis will require surgical correction.</p>		

## Prognosis

### Recurrence

The prognosis for patients following treatment of hemorrhoidal disease is good. Treatment results in resolution or improvement of symptoms with low rates of recurrence, although residual symptoms or recurrent symptoms may be higher in patients with continuing strong risk factors. Surgical hemorrhoidectomy confers the best long-term effect with less than 20% symptom recurrence and equally low retreatment rates when compared to rubber band ligation. This effect is more pronounced for grade 3 hemorrhoids than for grade 2 hemorrhoids.<sup>[21]</sup>

## Diagnostic guidelines

### International

#### ASGE guideline: the role of endoscopy in the patient with lower-GI bleeding

**Published by:** American Society for Gastrointestinal Endoscopy

**Last published:** 2014

**Summary:** One of a series of statements discussing the use of GI endoscopy in common clinical situations. Guidelines for appropriate use of endoscopy are based on a critical review of the available data and expert consensus. Further controlled clinical studies are needed to clarify aspects of this statement, and revision may be necessary as new data appear. Clinical consideration may justify a course of action at variance to these recommendations.

## Treatment guidelines

### International

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#### Practice parameters for the management of hemorrhoids (revised 2010)

**Published by:** American Society of Colon and Rectal Surgeons

**Last published:** 2011

**Summary:** Evidence-based guidelines that address the evaluation and management of hemorrhoids, based on a literature search of Medline, Pubmed, and the Cochrane Database of Collected Reviews from 1990 to 2010.

#### SSAT patient care guidelines: surgical management of hemorrhoids

**Published by:** The Society for Surgery of the Alimentary Tract

**Last published:** 2008

**Summary:** Guidelines on the use of surgical procedures for the treatment of hemorrhoids.

## Evidence scores

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1. Reduction in prolapse rates: there is poor-quality evidence that conventional hemorrhoidectomy may be more effective than stapled hemorrhoidectomy at reducing recurrent prolapse at 6 months. The benefits on other symptoms are unknown.

**Evidence level C:** Poor quality observational (cohort) studies or methodologically flawed randomized controlled trials (RCTs) of <200 participants.

[More info from BMJ Clinical Evidence](#)

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2. Reduction in symptom persistence: there is poor-quality evidence that rubber band ligation is more effective than expectant management in treating patients with second-degree hemorrhoids. There is also poor-quality evidence that it is more effective than infrared photocoagulation, sclerotherapy, stapled hemorrhoidectomy, or surgical hemorrhoidectomy.

**Evidence level C:** Poor quality observational (cohort) studies or methodologically flawed randomized controlled trials (RCTs) of <200 participants.

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3. Reduction in incidence of bleeding: there is poor-quality evidence that sclerotherapy is no more effective than management with education and advice in treating patients with first- or second-degree hemorrhoids.

**Evidence level C:** Poor quality observational (cohort) studies or methodologically flawed randomized controlled trials (RCTs) of <200 participants.

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4. Symptoms improvement: there is poor-quality evidence that infrared photocoagulation is as effective as sclerotherapy or rubber band ligation.

**Evidence level C:** Poor quality observational (cohort) studies or methodologically flawed randomized controlled trials (RCTs) of <200 participants.

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5. Symptoms improvement: there is poor-quality evidence that stapled hemorrhoidectomy may be less effective than conventional hemorrhoidectomy at reducing the risk of recurrence of prolapse at <1 year follow-up.

**Evidence level C:** Poor quality observational (cohort) studies or methodologically flawed randomized controlled trials (RCTs) of <200 participants.

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## Key articles

- Loder PB, Kamm MA, Nicholls RJ, et al. Haemorrhoids: pathology, pathophysiology and aetiology. *Br J Surg*. 1994;81:946-954. [Abstract](#)
- Rivadeneira D E, Steele SR, Ternent C, et al. Practice parameters for the management of hemorrhoids (revised 2010). *Dis Colon Rectum*. 2011;54:1059-1064. [Full text](#) [Abstract](#)
- MacRae HM, Temple LK, McLeod RS. A meta-analysis of hemorrhoidal treatments. *Semin Colon Rectal Surg*. 2002;13:77-83.
- Shanmugam V, Thaha MA, Rabindranath KS, et al. Rubber band ligation versus excisional haemorrhoidectomy for haemorrhoids. *Cochrane Database Syst Rev*. 2005;(3):CD005034. [Abstract](#)

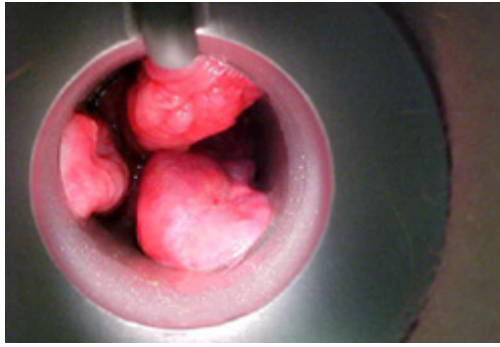
## References

1. Johanson JF, Sonnenberg A. The prevalence of hemorrhoids and chronic constipation. An epidemiologic study. *Gastroenterology*. 1990;98:380-386. [Abstract](#)
2. Johanson JF, Sonnenberg A. Temporal changes in the occurrence of hemorrhoids in the United States and England. *Dis Colon Rectum*. 1991;34:585-591. [Abstract](#)
3. Thomson WH. The nature of haemorrhoids. *Br J Surg*. 1975;62:542-552. [Abstract](#)
4. Loder PB, Kamm MA, Nicholls RJ, et al. Haemorrhoids: pathology, pathophysiology and aetiology. *Br J Surg*. 1994;81:946-954. [Abstract](#)
5. Haas PA, Fox TA Jr, Haas GP. The pathogenesis of hemorrhoids. *Dis Colon Rectum*. 1984;27:442-450. [Abstract](#)
6. Saleeby RG Jr, Rosen L, Stasik JJ, et al. Hemorrhoidectomy during pregnancy: risk or relief? *Dis Colon Rectum*. 1991;34:260-261. [Abstract](#)
7. Hosking SW, Smart HL, Johnson AG, et al. Anorectal varices, haemorrhoids, and portal hypertension. *Lancet*. 1989;1:349-352. [Abstract](#)
8. Moesgaard F, Nielsen ML, Hansen JB, et al. High fiber diet reducing bleeding and pain in patients with hemorrhoids: a double-blind trial of Vi-Siblin. *Dis Colon Rectum*. 1982;25:454-456. [Abstract](#)
9. ASGE Standards of Practice Committee, Pasha SF, Shergill A, et al. The role of endoscopy in the patient with lower GI bleeding. *Gastrointest Endosc*. 2014;79:875-885. [Full text](#) [Abstract](#)
10. Rivadeneira D E, Steele SR, Ternent C, et al. Practice parameters for the management of hemorrhoids (revised 2010). *Dis Colon Rectum*. 2011;54:1059-1064. [Full text](#) [Abstract](#)
11. MacRae HM, Temple LK, McLeod RS. A meta-analysis of hemorrhoidal treatments. *Semin Colon Rectal Surg*. 2002;13:77-83.

12. Wroblewski DE, Corman ML, Veidenheimer MC, et al. Long-term evaluation of rubber ring ligation in hemorrhoidal disease. *Dis Colon Rectum*. 1980;23:478-482. [Abstract](#)
13. Walker AJ, Leicester RJ, Nicholls RJ, et al. A prospective study of infrared coagulation, injection and rubber band ligation in the treatment of haemorrhoids. *Int J Colorectal Dis*. 1990;5:113-116. [Abstract](#)
14. Giordano P, Overton J, Madeddu F, et al. Transanal hemorrhoidal dearterialization: a systematic review. *Dis Colon Rectum*. 2009;52:1665-1671. [Abstract](#)
15. Senagore AJ, Singer M, Abcarian H, et al. A prospective, randomized, controlled, multicenter trial comparing stapled hemorrhoidopexy and Ferguson hemorrhoidectomy: perioperative and one-year results [published correction appears in *Dis Colon Rectum*. 2005;48:400; *Dis Colon Rectum*. 2005;48:1099]. *Dis Colon Rectum*. 2004;47:1824-1836. [Abstract](#)
16. Thaha MA, Campbell KL, Kazmi SA, et al. Prospective randomised multi-centre trial comparing the clinical efficacy, safety and patient acceptability of circular stapled anopexy with closed diathermy haemorrhoidectomy. *Gut*. 2009;58:668-678. [Abstract](#)
17. Nyström PO, Qvist N, Raahave D, et al; Stapled or Open Pile Procedure (STOPP) trial study group. Randomized clinical trial of symptom control after stapled anopexy or diathermy excision for haemorrhoid prolapse. *Br J Surg*. 2010;97:167-176. [Abstract](#)
18. Burch J, Epstein D, Baba-Akbari A, et al. Stapled haemorrhoidectomy (haemorrhoidopexy) for the treatment of haemorrhoids: a systematic review and economic evaluation. *Health Technol Assess*. 2008;12:iii-iv, ix-x, 1-193. [Full text](#) [Abstract](#)
19. Lumb KJ, Colquhoun PH, Malthaner R, et al. Stapled versus conventional surgery for hemorrhoids. *Cochrane Database Syst Rev*. 2006;(4):CD005393. [Full text](#) [Abstract](#)
20. Society for Surgery of the Alimentary Tract (SSAT). SSAT patient care guidelines: surgical management of hemorrhoids. October 2008. <http://www.ssat.com/> (last accessed 21 January 2016). [Full text](#)
21. Shanmugam V, Thaha MA, Rabindranath KS, et al. Rubber band ligation versus excisional haemorrhoidectomy for haemorrhoids. *Cochrane Database Syst Rev*. 2005;(3):CD005034. [Abstract](#)
22. Kluiber RM, Wolff BG. Evaluation of anemia caused by hemorrhoidal bleeding. *Dis Colon Rectum*. 1994;37:1006-1007. [Abstract](#)
23. Greenspon J, Williams SB, Young HA, et al. Thrombosed external hemorrhoids: outcome after conservative or surgical management. *Dis Colon Rectum*. 2004;47:1493-1498. [Abstract](#)

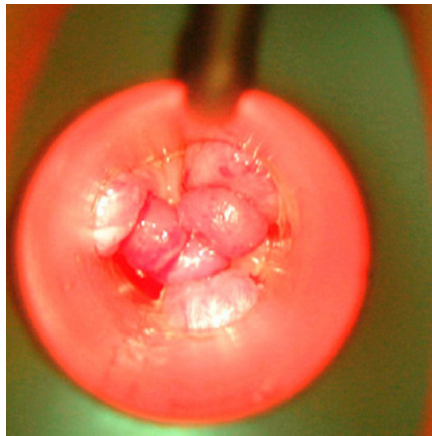


## Images



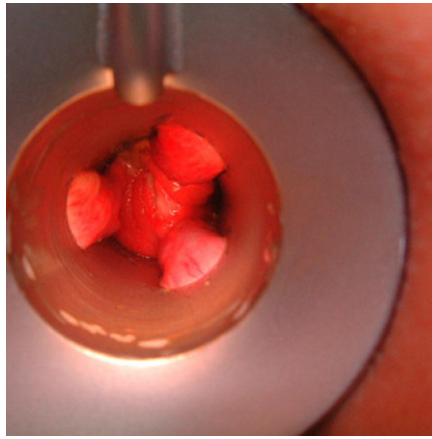
*Figure 1: Anoscope*

*Kurt G. Davis, MD*



*Figure 2: Rubber band on redundant hemorrhoidal tissue*

*Kurt G. Davis, MD*



*Figure 3: Bands placed above the dentate line*

*Kurt G. Davis, MD*

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