BMJ Best Practice

Haemorrhoids

Straight to the point of care

Last updated: Sep 27, 2024

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Summary

Haemorrhoids are vascular-rich connective tissue cushions located within the anal canal. Internal haemorrhoids lie proximal to the dentate line in the anal canal; external haemorrhoids are located distal to the dentate line.

Haemorrhoidal disease presents as painless rectal bleeding or sudden onset of perianal pain with a tender palpable perianal mass.

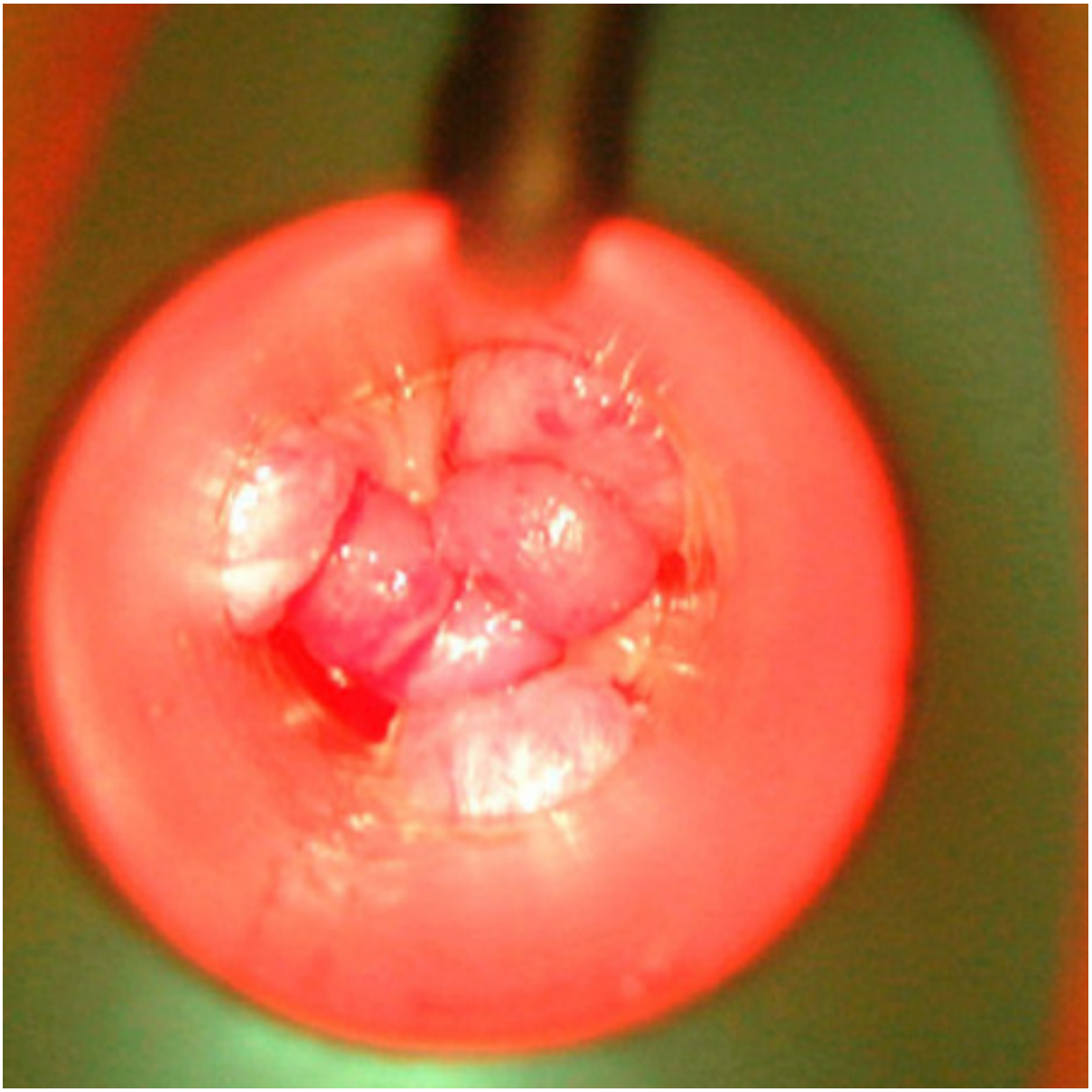
Diagnosis is confirmed with visualisation of the protruding tissue or anoscopic visualisation.

Treatment for all patients includes increasing dietary fibre. Rubber band ligation is a reasonable first-line treatment choice for grade 2 and 3 internal haemorrhoids. Other treatment options for grade 2 or 3 haemorrhoids include sclerotherapy, infrared coagulation, or haemorrhoidal arterial ligation. Surgical haemorrhoidectomy may be considered for patients with large grade 3 haemorrhoids, but it is typically reserved for patients with grade 4 haemorrhoids.

Complications include recurrence or worsening of symptoms, excessive bleeding, non-reducible prolapse, and, rarely, pelvic sepsis.

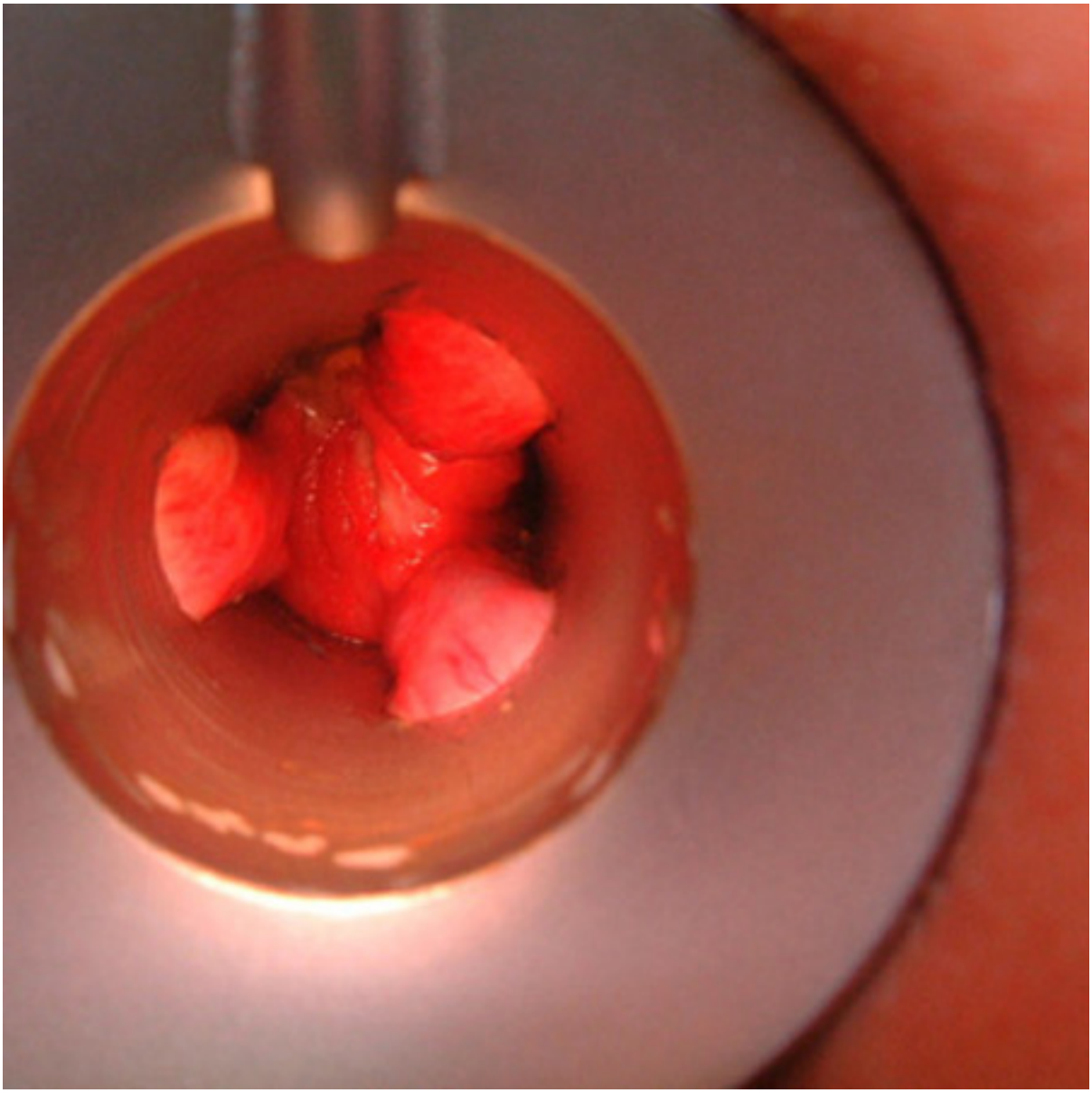
Definition

Haemorrhoidal cushions are normal anatomical 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.



Rubber band on redundant haemorrhoidal tissue

Kurt G. Davis, MD



Bands placed above the dentate line

Kurt G. Davis, MD

THEORY

Epidemiology

The exact incidence of haemorrhoidal disease is difficult to quantify, but community-based studies in the UK estimate that between 13% to 36% of the population is affected.[3]

Analysis of healthcare utilisation data in the US found that haemorrhoids were the third most common gastrointestinal, liver, or pancreatic disorder diagnosed in the outpatient setting, with an estimated 3.9 million cases per year.[4] The prevalence of haemorrhoids is approximately 4% based on self-report data from a nationwide survey in the US.[5] In contrast, the prevalence of haemorrhoids on colonoscopy screening ranges from 16.6% to 38.9%, but many of these patients reported no associated symptoms.[6] [7]

Haemorrhoids are more common in white patients than in black patients, with presentation peaking between the ages of 45-65 years.[5]

Aetiology

The primary aetiology is believed to be excessive straining due to either chronic constipation or diarrhoea. Repetitive or prolonged straining causes downward stress on the vascular haemorrhoidal cushions, leading to the disruption of the supporting tissue elements with subsequent elongation, dilation, and engorgement of the haemorrhoidal tissues.[1] [8] Other conditions can contribute to the formation of haemorrhoids: 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.[9]

Pathophysiology

Haemorrhoids are a normal anatomical and functional component of the anal canal; they become pathological and are termed haemorrhoidal disease only when they cause symptoms. As the patient strains at stool, the haemorrhoids 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 haemorrhoids 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.[1]

External haemorrhoids commonly cause symptoms of pruritus or a feeling of inadequate cleaning following a bowel movement. These haemorrhoidal tissues can also become engorged and clots can form, causing a thrombosed external haemorrhoid. 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 haemorrhoids

Haemorrhoids that are located in the distal anal canal, distal to the dentate line, and covered by sensate anoderm or skin.[1]

Internal haemorrhoids (grade 1 to 4)

Haemorrhoids that originate proximal to the dentate line and are 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 haemorrhoids is only a reflection of the degree of prolapse but is not a measure of either the disease severity or of the size of haemorrhoidal prolapse.[1] [2]

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 gastrointestinal malignancy. Physical examination reveals a healthy man with the only finding being bright blood on the examining finger following a digital rectal examination.

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 examination reveals a 2-cm, painful, bluish lesion adjacent to the anal canal.

Other presentations

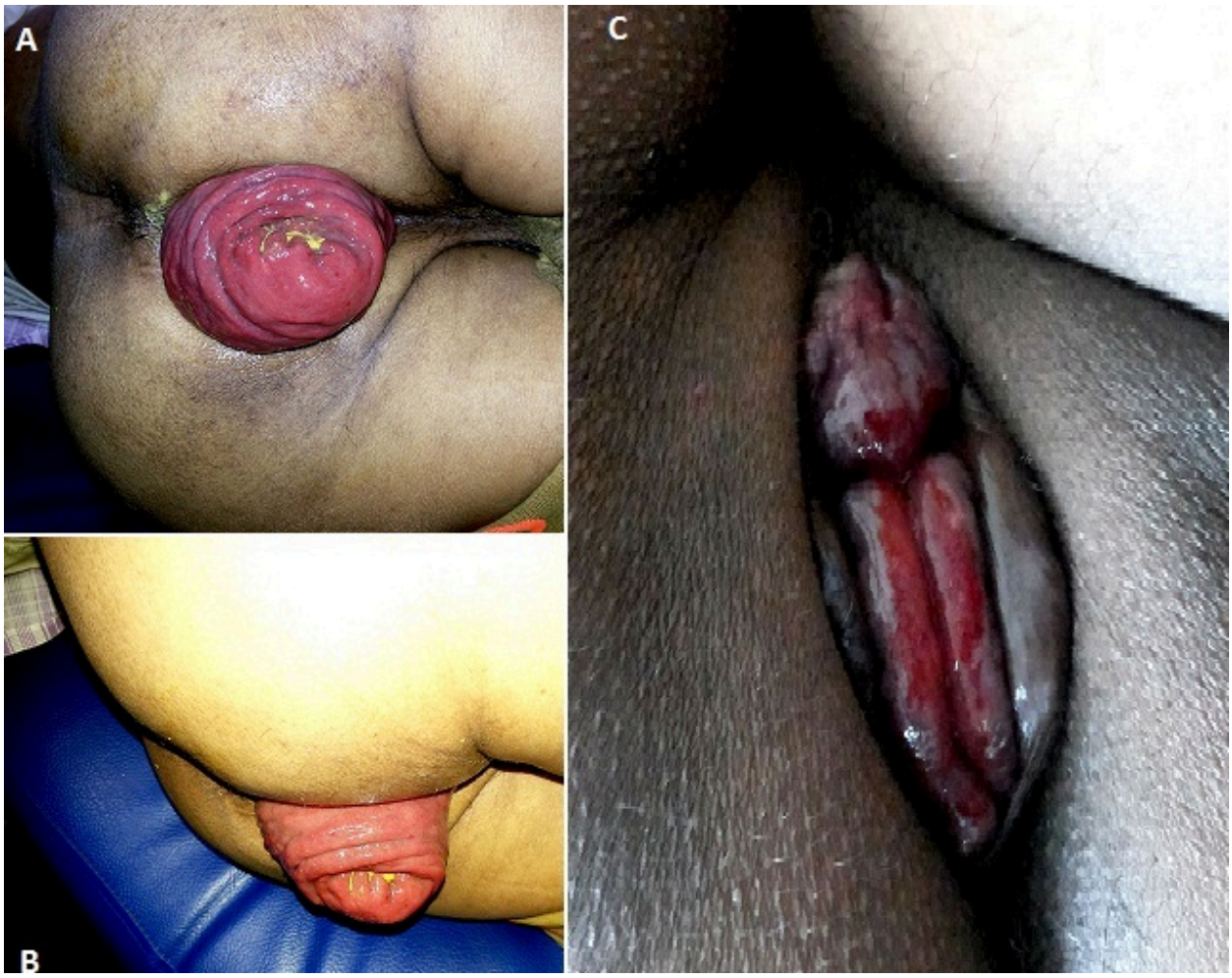
Haemorrhoids can also present with complaints of excess tissue surrounding the anal canal, causing pruritus or difficulty in cleaning following a bowel movement.

Approach

Characteristic features of symptomatic internal haemorrhoids are painless, bright red bleeding and intermittent protrusion from the rectum, which often follow a bowel movement.[1] [13] Pain may accompany complication of haemorrhoids. The presence of altered bowel habit (diarrhoea and/or constipation), abdominal pain, weight loss, iron-deficiency anaemia, or passage of blood clots and/or mucus (especially if persistent) should arouse suspicion of other potential diagnoses such as anal fissure, anal fistula, proctitis, inflammatory bowel disease, or colorectal cancer.

Physical examination

Physical examination of the anorectal canal should be performed in the left lateral position (Sims), the prone jack-knife position, or the lithotomy position (also called the knee-chest position).[2] [14] Examination should be approached very carefully, particularly if pain is the primary complaint. It begins with a visual inspection of the anal margin by gently spreading the buttocks, looking for external haemorrhoids, 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 haemorrhoidal prolapse (radial pattern) from a rectal prolapse (concentric pattern).



Complete rectal prolapse with a concentric fold pattern (A, B) and prolapsed internal haemorrhoids with a radial fold pattern (C)

Meher S. Pan Afr Med J. 2016 May 27; 24: 88; used with permission

Unless the patient is in a lot of pain, a digital examination and an anoscopic examination can then be performed with either a lighted anoscope or an external light source.[13]

The anoscopic examination is a simple and safe technique, which enables a full view of the anal canal and all of the haemorrhoidal 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 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 (diarrhoea and/or constipation), abdominal pain, weight loss, iron-deficiency anaemia, or passage of blood clots and/or mucus (although it is safe to initiate first-line treatment for any obvious haemorrhoids).[13] Further investigations to exclude such conditions may include a flexible endoscopy, which can be either a limited colonoscopy (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.[2] Criteria for a complete colon evaluation include age ≥50 years, family history of colorectal cancer, and positive fecal immunochemical testing. See also Colorectal cancer (Screening) .

Laboratory

A full blood count can be ordered if there is concern that the patient has experienced significant and prolonged rectal bleeding and if signs of anaemia are present. If microcytic or hypochromic anaemia is detected, further investigations such as a gastroscopy and full colonoscopy are warranted to determine the cause of anaemia.[2]

A stool test for occult haem, such as the fecal immunochemical test, is usually unnecessary if visible bleeding is reported. However, if no significant haemorrhoidal 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.

History and exam

Key diagnostic factors

presence of risk factors (common)

- Major risk factors include age between 45 and 65 years, history of constipation, pregnancy, and presence of a space-occupying pelvic lesion.

rectal bleeding (common)

- Most common symptom of haemorrhoids alongside intermittent protrusion. Usually bright bleeding in association with defecation or straining at stool.

intermittent protrusion (common)

- Most common symptom of haemorrhoids alongside rectal bleeding.

perianal pain/discomfort (common)

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

Other diagnostic factors

anal pruritus (common)

- May result from internal haemorrhoid prolapse-associated moisture or faecal incontinence, or result from the difficulty to maintain hygiene with extensive external haemorrhoids.

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 haemorrhoids.

Risk factors

Strong

age between 45-65 years

- Incidence of haemorrhoids peaks between the ages of 45-65 years, and declines after age 65 years.[5]

constipation

- The presence of chronic constipation associated with straining at stool is associated with the repetitive elongation of the haemorrhoidal cushions and disruption of the supporting elements. This leads to the enlargement and engorgement of the haemorrhoidal tissue.[9]

pregnancy or space-occupying pelvic lesion

- Pregnancy is often associated with the progressive development of haemorrhoidal symptoms.[10] Pathological pelvic lesions, such as large ovarian cysts, can also encourage the development of haemorrhoidal 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 hypertension contributes to the formation of haemorrhoids, but these conditions can result in rectal varices.[11]

ascites

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

Investigations

1st test to order

Test	Result
anoscopic examination • The most specific and conclusive diagnostic test for haemorrhoids.	**haemorrhoids**
colonoscopy/flexible sigmoidoscopy • Used to exclude serious pathology such as inflammatory bowel disease or cancer. In the presence of suspicious symptoms, such as altered bowel habit (diarrhoea and/or constipation), abdominal pain, weight loss, iron-deficiency anaemia, or passage of blood clots and/or mucus, lower gastrointestinal endoscopy is performed. The definitive test is colonoscopy. Criteria for a complete colon evaluation include age ≥50 years, family history of colorectal cancer, and positive faecal immunochemical testing.	**usually normal; may reveal other pathologies**
FBC • Ordered only if there is concern that the patient has experienced significant prolonged rectal bleeding and signs of anaemia are present.	**may demonstrate microcytic/hypochromic anaemia**
stool for occult haem • Most commonly used test is the fecal immunochemical test. • Unnecessary unless no significant haemorrhoidal tissue is seen on examination; further evaluation deemed unnecessary if the results are negative.	**positive**

Differentials

Condition	Differentiating signs / symptoms	Differentiating tests
Anal fissure	• Anal fissures are associated with painful bleeding on defecation and possibly a sentinel skin tag (sometimes reported by the patient as a 'painful haemorrhoid'). Fissures are seen as linear tears in the anal mucosae, most commonly in the posterior midline of the anal canal.	• Physical examination.
Crohn's disease	• Crohn's disease affecting the large bowel can present with rectal bleeding and is associated with diarrhoea rather than constipation. Family history of inflammatory bowel disease is often present.	• 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.
Ulcerative colitis	• Ulcerative colitis commonly presents with rectal bleeding and is associated with diarrhoea rather than constipation. Family history of inflammatory bowel disease is often present.	• Endoscopy reveals diffuse inflammation and ulceration in cases of acute ulcerative colitis.
Colorectal cancer	• History of altered bowel habit (diarrhoea and/or constipation), abdominal pain, weight loss, iron-deficiency anaemia, colonic polyps, and positive family history suggest colorectal cancer.	• Endoscopy may reveal mass, stricture, and obstruction. Blood tests commonly reveal anaemia.
Anal fistula	• Commonly bleeding with a history of a preceding abscess, with continued intermittent bloody/purulent drainage. Visualised as a punctate opening on the anal margin adjacent to the anal canal.	• Physical examination.
Rectal prolapse	• Usually presents as protruding mass per rectum especially with straining.	• Physical examination. A defecogram may help distinguish between mucosal

Condition	Differentiating signs / symptoms	Differentiating tests
	May be associated with mucus or blood-stained discharge, pain, and or faecal incontinence.	prolapse and a full-thickness rectal prolapse. Examination under anaesthesia may be required to confirm and assess severity.

Approach

The main aim of treatment is relief of symptoms. The treatment depends on whether the symptomatic haemorrhoids are internal, external, or a combination of both. Grading of internal haemorrhoids 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, specifically increased fibre intake, adequate fluids, and not spending excessive time sitting at stool.[1] [13][14] Oral laxatives such as polyethylene glycol or docusate sodium may be given to patients who are unable to increase their dietary fibre intake.[1][14] Other basic treatments may include topical treatments and analgesics.[14]

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 haemorrhoids. Occasional short-term use of topical corticosteroids may soothe pruritic symptoms; however, prolonged use can cause allergic reactions or sensitisation, and there is no robust evidence to recommend their long-term use.[13]

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

Internal haemorrhoids

Rubber band ligation is a simple and effective method of managing excess tissue and is the treatment of choice for grade 1 or 2 haemorrhoids that are unresponsive to conservative management.[1] [13][14]

Rubber band ligation is performed with the aid of an anoscope. A rubber band is placed on the redundant haemorrhoidal tissue, with care taken to place the bands above the dentate line. The tissue contained in the band necroses and sloughs in approximately 1 week; success rates for controlling haemorrhoidal disease are good.[15] Alternatively, rubber bands can be placed at the same time as a colonoscopy.[15] Patients can experience transient bleeding or, extremely rarely, septic events. Anticoagulants should be withheld before performing rubber band ligation, and any bleeding after the procedure should be promptly evaluated.

Sclerotherapy and infrared coagulation may be more suitable for haemorrhoids that are too small for rubber band ligation (which may include grade 1 to 2 haemorrhoids).[1] Both have similar effects and may require multiple treatment sessions to successfully ablate the tissue.[1] [13] Sclerotherapy involves injecting a chemical agent directly into the haemorrhoidal tissue to cause local tissue destruction and scarring of the haemorrhoidal tissue. Infrared coagulation uses infrared radiation applied directly to the haemorrhoid, which causes coagulation, scarring, and subsequent fixation of the internal haemorrhoidal tissue.[1] [13] Both sclerotherapy and infrared coagulation are office procedures and do not require anaesthesia.

Haemorrhoid artery ligation (also known as transanal haemorrhoidal de-arterialisation) is an option for grade 2 or 3 haemorrhoids.[14] Haemorrhoid artery ligation utilises a custom-designed proctoscope coupled with a Doppler transducer to identify and ligate the terminal branches of superior rectal artery above the dentate line (resulting in haemorrhoidal shrinkage). The procedure is commonly done under a short general anaesthetic and multiple ligations may be required.[16] [17] Patients with grade 2 or 3 haemorrhoids who were randomised to haemorrhoidal arterial ligation experienced fewer recurrences at 1 year than patients treated with rubber band ligation.[18] However, symptom scores and complications

did not differ between treatment groups, and patients treated with haemorrhoidal arterial ligation had more early postoperative pain.[18]

Rubber band ligation remains a reasonable choice for grade 3 haemorrhoids.[1] [13][14] However, patients with large grade 3 haemorrhoids (in addition to patients refractory to or who cannot tolerate outpatient procedures; patients with large, symptomatic external tags; or patients with grade 4 haemorrhoids) are candidates for surgery (haemorrhoidectomy, stapled haemorrhoidopexy, haemorrhoid artery ligation).[1] [13] In a small study of patients with grade 3 or small grade 4 haemorrhoids, rubber band ligation and stapled haemorrhoidopexy (in which prolapsing haemorrhoids are relocated within the anal canal, rather than excised) were equally effective in controlling symptomatic prolapse, but rubber band ligation was associated with an increased risk of recurrent bleeding.[19] Stapled haemorrhoidopexy was associated with increased pain and analgesia use at 2-week and at 2-month follow-up; the two treatment groups did not differ with respect to patient satisfaction or quality of life.[19] However, guidelines recommend against routine use of stapled haemorrhoidopexy as a first-line surgical option due to an increased risk of complications and recurrence.[1] [13] Patients should be informed of the potential for symptomatic recurrence following stapled haemorrhoidopexy.[20] [21]

Surgical haemorrhoidectomy is the most effective first-line approach for grade 4 internal haemorrhoids.[13] [14] One network meta-analysis that included patients undergoing elective surgery for grade 3 to 4 haemorrhoids found that conventional haemorrhoidectomy was associated with greater postoperative pain but fewer haemorrhoid recurrences than stapled haemorrhoidopexy.[22] Another network meta-analysis of studies involving surgical procedures for grade 3 or 4 haemorrhoids found haemorrhoid artery ligation and stapled haemorrhoidopexy were associated with more complications and higher recurrence rates than open haemorrhoidectomy and the use of an ultrasonic scalpel. In addition, open haemorrhoidectomy resulted in fewer complications but a higher recurrence rate and the use of an ultrasonic scalpel resulted in more complications but a lower recurrence rate.[23] A large, open-label pragmatic trial of 777 patients referred to hospital for surgical treatment of haemorrhoids (including grade 4) found that patients who received stapled haemorrhoidopexy had less short-term pain.[24] [25] However, recurrence rates, symptoms, re-interventions and quality-of-life measures all favoured traditional haemorrhoidectomy.[24] [25] Meta-analyses have found that stapled haemorrhoidopexy and haemorrhoidal artery ligation were both effective treatments for haemorrhoids but stapled haemorrhoidopexy resulted in a lower recurrence rate.[26] [27]

External or combined internal and external haemorrhoids

For external haemorrhoids, or combined internal and external haemorrhoids with severe symptoms, surgical excision may be the only effective treatment option.[13] This involves excision under either a general or regional anaesthetic. Asymptomatic external haemorrhoids do not warrant invasive treatment but may be observed while the patient follows dietary and lifestyle modification.

In thrombosis of external haemorrhoids, minimally invasive procedures such as de-roofing may be required for symptom relief, which can be done under topical, regional, or general anaesthetic.

Early haemorrhoidectomy is likely to increase speed of symptom resolution, reduce the chance of recurrence, and provide longer periods of remission compared to conservative management alone.[1] [13] [28]

Haemorrhoids during pregnancy

Pregnant and postnatal women have a higher incidence of haemorrhoids. A non-operative approach is recommended, with basic treatment including laxatives, topical treatments, and analgesics.[2] [14] Surgical haemorrhoid removal is rarely an appropriate intervention for pregnant women as haemorrhoidal symptoms often resolve spontaneously after birth, but it may be considered in extreme circumstances.[29] [30]

Treatment algorithm overview

Please note that formulations/routes and doses may differ between drug names and brands, drug formularies, or locations. Treatment recommendations are specific to patient groups: see disclaimer

Acute (summary)		
initial presentation: non-pregnant		
	1st	**dietary and lifestyle modification**
grade 1 haemorrhoids	**adjunct**	**rubber band ligation or sclerotherapy or infrared coagulation**
grade 2 prolapsing internal haemorrhoids	**plus**	**rubber band ligation or sclerotherapy or infrared coagulation or haemorrhoidal arterial ligation**
grade 3 prolapsing internal haemorrhoids	**plus**	**rubber band ligation or haemorrhoidal arterial ligation or stapled haemorrhoidopexy**
grade 4 internal, external, or mixed internal and external haemorrhoids	**plus**	**surgical haemorrhoidectomy**
initial presentation: pregnant		
	1st	**dietary and lifestyle modification**
	adjunct	**surgical haemorrhoidectomy**

Ongoing (summary)		
treatment failure of rubber band ligation, sclerotherapy, infrared coagulation, haemorrhoidal arterial ligation, or stapled haemorrhoidopexy		
	1st	**surgical haemorrhoidectomy**

Treatment algorithm

Please note that formulations/routes and doses may differ between drug names and brands, drug formularies, or locations. Treatment recommendations are specific to patient groups: see disclaimer

Acute

initial presentation: non-pregnant

initial presentation: non-pregnant — **1st** — **dietary and lifestyle modification**

» All patients should be offered information about lifestyle and dietary modification, specifically increased fibre intake and adequate fluids.[1] [13][14]

» Consuming 25-30 g of fibre daily is recommended, either with high-fibre foods or with commercial fibre supplements, as well as drinking 6-8 glasses of fluids.[1] These measures alone may be all that is necessary for those patients with mild symptoms.[12] Oral laxatives such as polyethylene glycol or docusate sodium may be given to patients who are unable to increase their dietary fibre intake.[1][14] Other basic treatments may include topical treatments and analgesics.[14]

» Straining or spending excessive time at stool should be discouraged.[1] [13][14] Moist, gentle cleaning following a bowel movement is advised.

» In the presence of suspicious symptoms, such as altered bowel habit (diarrhoea and/or constipation), abdominal pain, weight loss, iron-deficiency anaemia, or passage of blood clots and/or mucus, lower gastrointestinal endoscopy is performed.

grade 1 haemorrhoids — **adjunct** — **rubber band ligation or sclerotherapy or infrared coagulation**

Treatment recommended for SOME patients in selected patient group

» Rubber band ligation is a simple and effective method of managing excess tissue and is the treatment of choice for grade 1 haemorrhoids that are unresponsive to conservative management.[1] [13] [14] Rubber band ligation is performed with the aid of an anoscope. A rubber band is placed on the redundant haemorrhoidal tissue, with care taken to place the bands above the dentate line. The tissue contained in the band necroses and sloughs in approximately 1 week; success rates for controlling haemorrhoidal disease are good.[15] Patients can experience transient bleeding or, extremely rarely, septic events.

Acute

Anticoagulants should be withheld before performing rubber band ligation, and any bleeding after the procedure should be promptly evaluated.

» Sclerotherapy and infrared coagulation can also be performed if grade 1 haemorrhoids are unresponsive to conservative management.[1] [13][14] Both have similar effects and may require multiple treatment sessions to successfully ablate the tissue.[1] [13] Sclerotherapy and infrared coagulation may be more suitable for haemorrhoids that are too small for rubber band ligation.[1]

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

» Infrared coagulation uses infrared radiation applied directly to the haemorrhoid, which causes coagulation, scarring, and subsequent fixation of the internal haemorrhoidal tissue.[1] [13]

» Both sclerotherapy and infrared coagulation are office procedures and do not require anaesthesia.

grade 2 prolapsing internal haemorrhoids **plus** **rubber band ligation or sclerotherapy or infrared coagulation or haemorrhoidal arterial ligation**

Treatment recommended for ALL patients in selected patient group

» Rubber band ligation is a simple and effective method of managing excess tissue and is the treatment of choice for grade 2 haemorrhoids that are unresponsive to conservative management.[1] [13][14] Sclerotherapy, infrared coagulation, or haemorrhoidal arterial ligation can also be used to treat grade 2 haemorrhoids.[1] [13][14]

» Rubber band ligation is performed with the aid of an anoscope. A rubber band is placed on the redundant haemorrhoidal tissue, with care taken to place the bands above the dentate line. The tissue contained in the band necroses and sloughs in approximately 1 week; success rates for controlling haemorrhoidal disease are good.[15] Patients can experience transient bleeding or, extremely rarely, septic events. Anticoagulants should be withheld before performing rubber band ligation, and any

Acute

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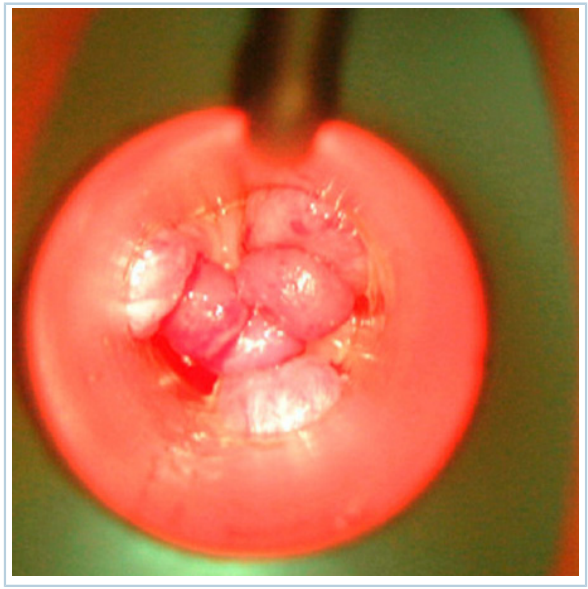
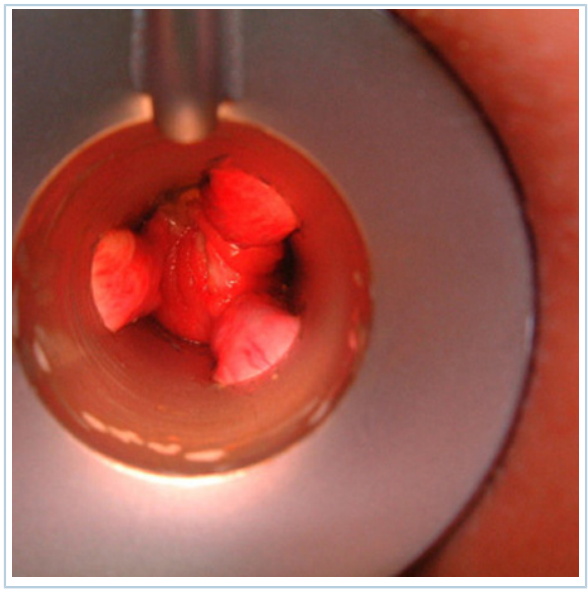


Rubber band on redundant haemorrhoidal tissue
Kurt G. Davis, MD



Bands placed above the dentate line
Kurt G. Davis, MD

Acute

Anoscope
Kurt G. Davis, MD

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Acute

grade 3 prolapsing internal haemorrhoids **plus** **rubber band ligation or haemorrhoidal arterial ligation or stapled haemorrhoidopexy**

Treatment recommended for ALL patients in selected patient group

» Rubber band ligation remains a reasonable choice for grade 3 haemorrhoids.[1] [13] [14] However, patients with large grade 3 haemorrhoids (in addition to patients refractory to or who cannot tolerate outpatient procedures; patients with large, symptomatic external tags; or patients with grade 4 haemorrhoids) are candidates for surgery (haemorrhoidectomy, stapled haemorrhoidopexy, haemorrhoid artery ligation).[1] [13]

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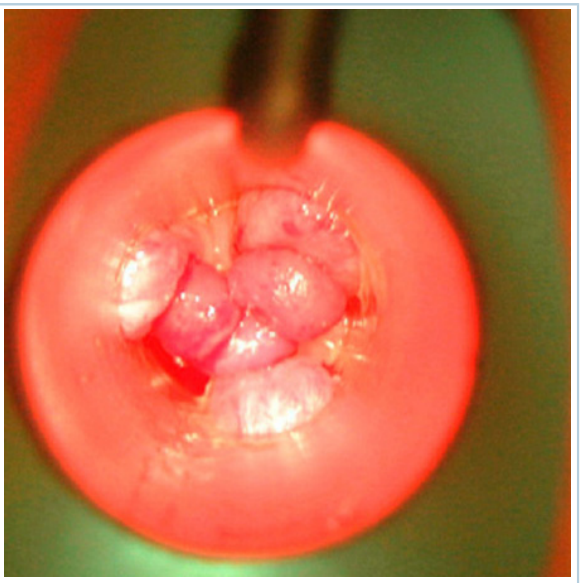

Rubber band on redundant haemorrhoidal tissue
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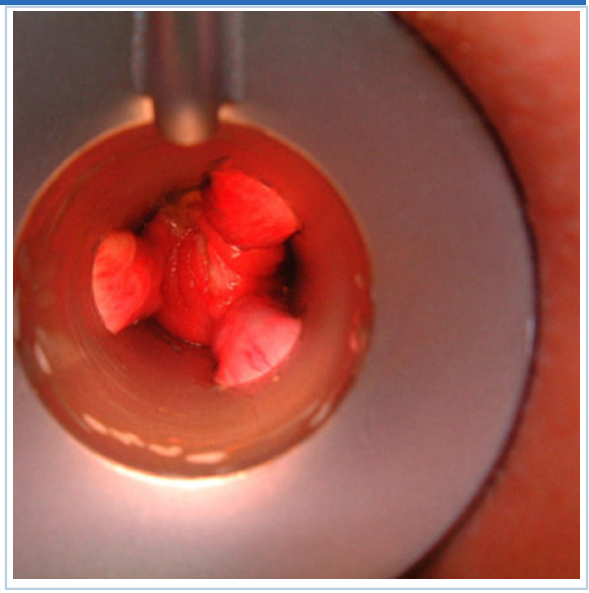
MANAGEMENT

Acute



Bands placed above the dentate line
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Anoscope
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» In a small study of patients with grade 3 or small grade 4 haemorrhoids, rubber band ligation and stapled haemorrhoidopexy (in which prolapsing haemorrhoids are relocated within the anal canal, rather than excised) were equally effective in controlling symptomatic prolapse, but rubber band ligation was associated with an increased risk of recurrent bleeding.[19] Stapled haemorrhoidopexy was associated with increased pain and analgesia use at 2-week and at 2-month follow-up; the two treatment groups did not differ with respect to patient satisfaction or quality of life.[19] However, guidelines recommend against routine use of stapled haemorrhoidopexy as a first-line surgical option due to an increased risk of complications and recurrence.[1] [13] Patients should be informed of the potential for symptomatic recurrence following stapled haemorrhoidopexy.[20] [21]

Acute

grade 4 internal, external, or mixed internal and external haemorrhoids	**plus**	**surgical haemorrhoidectomy** Treatment recommended for ALL patients in selected patient group » Surgical haemorrhoidectomy is the most effective first-line approach for grade 4 internal haemorrhoids.[13] [14] One network meta-analysis that included patients undergoing elective surgery for grade 3 to 4 haemorrhoids found that conventional haemorrhoidectomy was associated with greater postoperative pain but fewer haemorrhoid recurrences than stapled haemorrhoidopexy.[22] A large, open-label pragmatic trial of 777 patients referred to hospital for surgical treatment of haemorrhoids (including grade 4) found that patients who received stapled haemorrhoidopexy had less short-term pain.[24] [25] However, recurrence rates, symptoms, re-interventions and quality-of-life measures all favoured traditional haemorrhoidectomy.[24] [25] » For external haemorrhoids, or combined internal and external haemorrhoids with severe symptoms, surgical excision may be the only effective treatment option. This involves excision under either a general or regional anaesthetic. Asymptomatic external haemorrhoids do not warrant invasive treatment but may be observed while the patient follows dietary and lifestyle modification. » In thrombosis of external haemorrhoids, minimally invasive procedures such as de-roofing may be required for symptom relief, which can be done under topical, regional, or general anaesthetic. » Early haemorrhoidectomy is likely to increase speed of symptom resolution, reduce the chance of recurrence, and provide longer periods of remission compared to conservative management alone.[1] [13] [28]
initial presentation: pregnant		
	1st	**dietary and lifestyle modification** » All patients should be offered information about lifestyle and dietary modification, specifically increased fibre intake, adequate fluids, and not straining or spending excessive time sitting at stool.[1] [13] [14] Moist, gentle cleaning following a bowel movement is advised. These measures alone may be all that is necessary for those patients with mild symptoms.[12]

Acute

» A non-operative approach is recommended during pregnancy, with basic treatment including laxatives, topical treatments, and analgesics.[2] [14]

» Pregnant and postnatal women have a higher incidence of haemorrhoids, but symptoms typically resolve spontaneously after birth.[29]

adjunct **surgical haemorrhoidectomy**

Treatment recommended for SOME patients in selected patient group

» Surgery is rarely an appropriate intervention for pregnant women as haemorrhoidal symptoms often resolve spontaneously after birth, but it may be considered in extreme circumstances.[29] [30]

Ongoing

treatment failure of rubber band ligation, sclerotherapy, infrared coagulation, haemorrhoidal arterial ligation, or stapled haemorrhoidopexy

1st **surgical haemorrhoidectomy**

» Surgical haemorrhoidectomy is the best treatment for patients with combined internal and external haemorrhoids or for any patient who has failed conservative treatment options for their internal haemorrhoids. Early haemorrhoidectomy is likely to increase speed of symptom resolution, reduce the chance of recurrence, and provide longer periods of remission compared to conservative management alone.[1] [13] [28]

Emerging

Electrotherapy

Electrotherapy (also known as electrocoagulation) is an alternative to banding for patients with grade 1 or 2 haemorrhoids, and an alternative to surgery for patients with grade 3 or 4 haemorrhoids.[31] Approaches include a low-amplitude direct electric current (between 8-16 mA) used in the outpatient setting, or a higher amplitude direct electric current (up to 30 mA) with the patient under general or spinal anaesthesia. In the UK, the National Institute for Health and Care Excellence (NICE) recommends electrotherapy for the treatment of grade 1 to 3 haemorrhoids in adults.[31]

Phlebotonics

Phlebotonics are a diverse group of drugs that include natural flavonoids from plant extracts and synthetic compounds such as calcium dobesilate. Phlebotonics may be helpful for treatment of both acute and chronic haemorrhoidal disease.[13] Their mechanism of action is not fully established, but they are thought to strengthen blood vessel walls, increase venous tone, increase lymphatic drainage, and normalise capillary permeability.[13] In one Cochrane review, phlebotonics significantly reduced pruritus, bleeding, discharge, leakage, and overall symptoms in patients with haemorrhoids, but heterogeneity was significant and there were methodological limitations in many of the included trials.[32]

Radiofrequency ablation

Radiofrequency ablation of haemorrhoids (Rafaelo procedure) has gained popularity both as an outpatient and inpatient procedure for grade 1 to 3 haemorrhoids. A specially designed probe connected to a radiofrequency generator is inserted into haemorrhoidal cushions causing the tissue to heat up, and haemorrhoids to become necrotic and shrink. Short-term outcomes of this procedure are promising, but medium- to long-term outcomes are still largely unknown.[33]

Primary prevention

A diet rich in fibre can help prevent constipation, which is the main risk factor for haemorrhoids. The daily recommended consumption is 25-30 g of fibre either in the form of high-fibre foods or commercial fibre supplements.[12] Concomitant intake of adequate hydration should help in avoiding constipation.

Secondary prevention

A diet rich in fibre can shorten the gastrointestinal transit time, increases stool weight, and helps prevent constipation, which is the main risk factor for haemorrhoids. A daily supplement of 25-30 g of either high fibre foods or commercial fibre supplements along with increased hydration improves constipation and hence haemorrhoidal symptoms.[1] [13][14]

Patient discussions

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

Advise patients to avoid excessive straining at stool and to avoid sitting on the toilet for long periods of time.[1] [13][14]

Constipation can be a causative factor in haemorrhoid formation and can be avoided by adding fibre and fluids to the diet; consuming 25-30 g of fibre daily is recommended, either with high-fibre foods or with commercial fibre supplements.[1] [12][13][14]

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

For the management of pain following surgical haemorrhoidectomy, advise patients to use regular simple analgesics, such as paracetamol or ibuprofen, and to use stool softeners daily to avoid constipation. Chemical sphincter relaxants (e.g., glyceryl trinitrate) applied to the anus confer some benefit. Metronidazole may also be prescribed.[37]

[NICE Clinical Knowledge Summaries: haemorrhoids] (https://cks.nice.org.uk/haemorrhoids)

FOLLOW UP

Monitoring

Monitoring

Rectal bleeding is a characteristic feature of symptomatic haemorrhoids that should also be monitored. Patients with continuous bleeding or those who develop symptomatic anaemia require early endoscopic evaluation (colonoscopy) to eliminate other proximal pathology prior to interventional treatment for haemorrhoids.[2] [13] Typically, patients are reviewed to confirm wound healing and symptom resolution following treatment. Long-term follow-up is unnecessary unless there is any treatment-related complication or recurrence of persistent symptoms especially sinister gastrointestinal symptoms (e.g., bleeding, anaemia, alteration in bowel habits, abdominal pain, weight loss) in which case patients require re-evaluation including colonoscopy.

Complications

Complications	Timeframe	Likelihood
anaemia from continuous/excessive bleeding	**short term**	**medium**
Rectal bleeding is a characteristic feature of symptomatic haemorrhoids. At times the bleeding can be excessive or massive, or may be the aetiology of symptomatic anaemia, especially in patients taking oral anticoagulation medications.[35] Patients with continuous bleeding or those who develop symptomatic anaemia require early endoscopic evaluation (colonoscopy).[2] [13] This evaluation is followed by definitive haemorrhoid treatment after more proximal pathology is eliminated.		
thrombosis	**short term**	**medium**
Acute thrombosis of a haemorrhoid manifests as the sudden onset of perianal pain and the appearance of a tender nodule adjacent to the anal canal.[1] The thrombosis often follows a period of vigorous activity. The treatment of an acute thrombosis involves the relief of pain, which is the predominant symptom. Non-surgical treatment consists of warm tub soaks. Mild oral analgesia and stool softeners can be offered.[1] The thrombus will be gradually resorbed over 1 to 2 weeks. Early surgical de-roofing or excision can be considered when symptoms are severe; this will also result in faster resolution of symptoms.[1] [13] [28]		
incarceration	**short term**	**low**
Prolapsing haemorrhoidal tissue can become incarcerated and be unable to be reduced into the anal canal, causing severe pain. The treatment for incarcerated haemorrhoids is traditionally urgent surgical haemorrhoidectomy. Adjuncts to reduce the swelling and to facilitate conservative excision include hyaluronidase injection into the swollen haemorrhoidal tissue.		
faecal incontinence	**long term**	**medium**
Considerable risk of some degree of impaired continence, usually to flatus (52%) and liquid stool (40%) has been reported following surgical haemorrhoidectomy.[34] Severe incontinence is rare; women are at greater risk. Grade of haemorrhoids does not appear to influence risk of faecal incontinence. Rubber band ligation was not associated with faecal incontinence in one review.[34] Network meta-analyses suggest that stapled haemorrhoidectomy and open haemorrhoidectomy are associated with the highest risk of bowel incontinence.[23][36]		
pelvic sepsis	**long term**	**low**
Clinically disproportionate rectal pain, urinary retention, abdominal pain, and pyrexia are often warning signs. Technically difficult procedures, high and incomplete staple line with full thickness excision should raise suspicion. Immunocompromised patients including people with diabetes, those on long-term corticosteroids may be at risk.		

Complications	Timeframe	Likelihood
Imaging (plain chest x-ray, abdominal x-ray, or computed tomography scan) may reveal free air in the peritoneum or retroperitoneum, and may be diagnostic. Sepsis can progress rapidly to multi-organ failure and shock, and is often fatal. Survival is dependent on early recognition and immediate intervention with empirical broad-spectrum antibiotic therapy, which should be administered within 1 hour of recognition of suspected sepsis. Urgent surgical evaluation is warranted.		
anal stenosis	**long term**	**low**
Increased incidence with extensive, circumferential excision. Severe long-standing stenosis is rare. Meticulous attention to technical details, including preservation of skin bridges in between excised pedicles, should prevent occurrence of stenosis. Minor fibrotic stenosis is treated by dilation in outpatient clinics followed by self-dilation. Significant stenosis will require surgical correction.		

Prognosis

Recurrence

The prognosis for patients following treatment of haemorrhoidal 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 haemorrhoidectomy confers the best long-term effect with less than 20% symptom recurrence and equally low re-treatment rates when compared to rubber band ligation. This effect is more pronounced for grade 3 haemorrhoids than for grade 2 haemorrhoids.[34]

Diagnostic guidelines

Europe

The European Society of Coloproctology: guideline for haemorrhoidal disease (https://www.escp.eu.com/guidelines/published-collaborative-escp-guidelines-projects)

Published by: European Society of Coloproctology **Last published:** 2020

North America

The American Society of Colon and Rectal Surgeons clinical practice guidelines for the management of hemorrhoids (https://www.fascrs.org/physicians/clinical-practice-guidelines)

Published by: American Society of Colon and Rectal Surgeons **Last published:** 2024

ACG clinical guidelines: management of benign anorectal disorders (https://gi.org/guidelines)

Published by: American College of Gastroenterology **Last published:** 2021

The role of endoscopy in patients with anorectal disorders (https://www.asge.org/home/practice-support/guidelines#lower-gi)

Published by: American Society for Gastrointestinal Endoscopy **Last published:** 2010

Treatment guidelines

United Kingdom

Stapled haemorrhoidopexy for the treatment of haemorrhoids (http://guidance.nice.org.uk/TA128)

Published by: National Institute for Health and Care Excellence **Last published:** 2007 (re-assessed 2016)

Europe

The European Society of Coloproctology: guideline for haemorrhoidal disease (https://www.escp.eu.com/guidelines/published-collaborative-escp-guidelines-projects)

Published by: European Society of Coloproctology **Last published:** 2020

North America

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The role of endoscopy in patients with anorectal disorders (https://www.asge.org/home/practice-support/guidelines#lower-gi)

Published by: American Society for Gastrointestinal Endoscopy **Last published:** 2010

Oceania

Australian Department of Health pregnancy care guidelines: common conditions during pregnancy (https://www.health.gov.au/resources/pregnancy-care-guidelines)

Published by: Australian Department of Health **Last published:** 2024

Online resources

1. NICE Clinical Knowledge Summaries: haemorrhoids (https://cks.nice.org.uk/haemorrhoids) *(external link)*

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Images

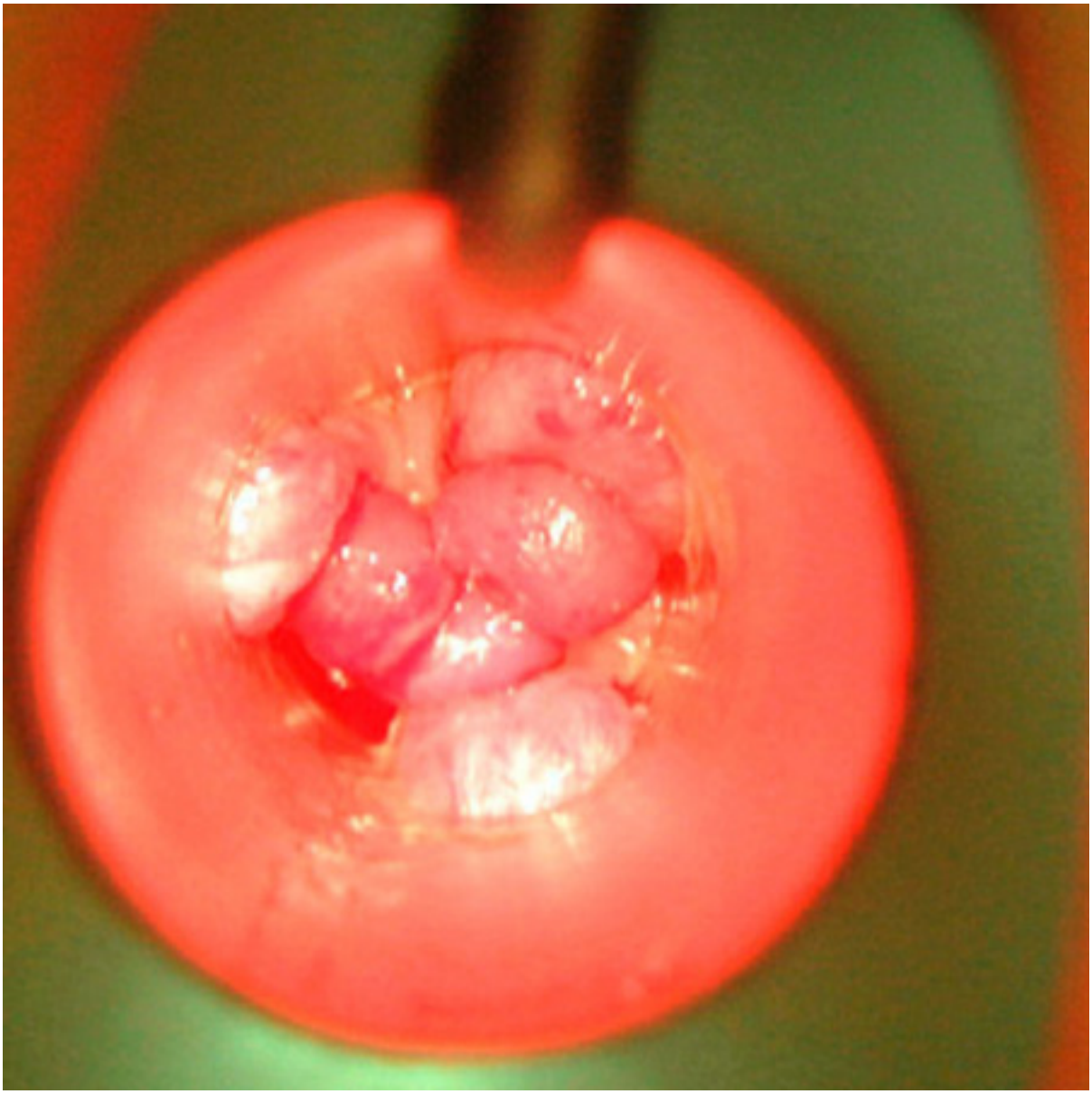

Figure 1: Rubber band on redundant haemorrhoidal tissue

Kurt G. Davis, MD

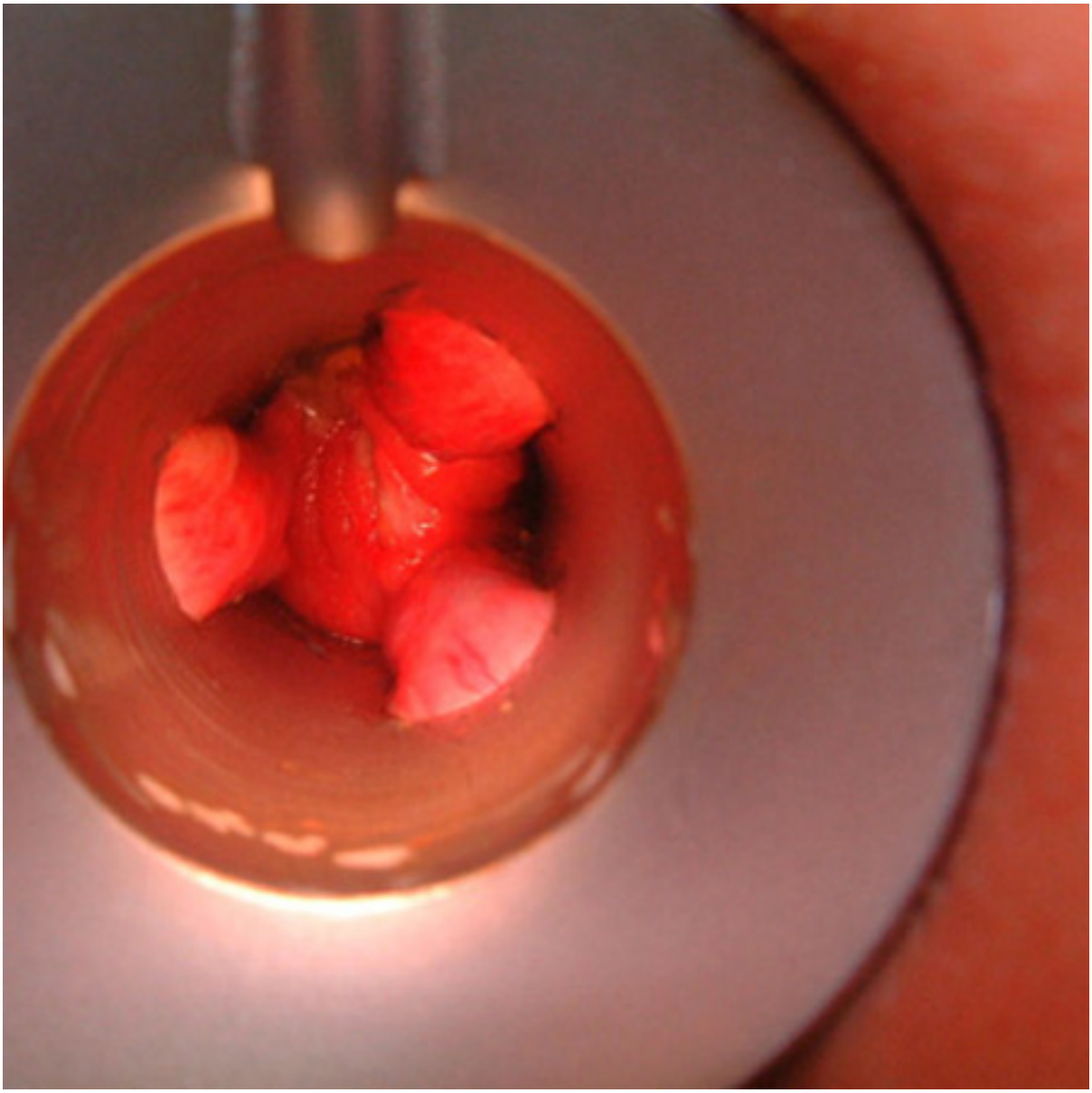

Figure 2: Bands placed above the dentate line

Kurt G. Davis, MD

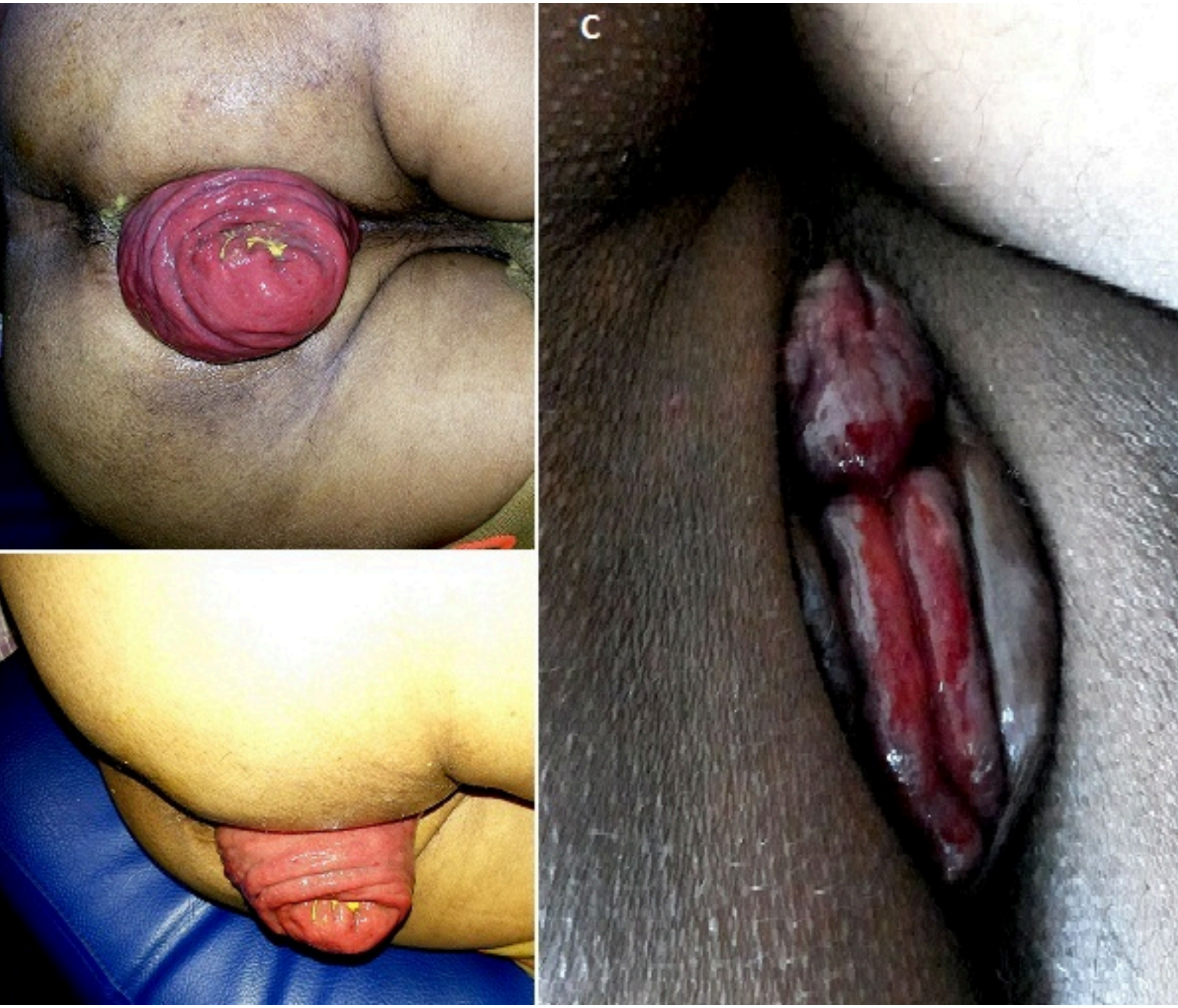

Figure 3: Complete rectal prolapse with a concentric fold pattern (A, B) and prolapsed internal haemorrhoids with a radial fold pattern (C)

Meher S. Pan Afr Med J. 2016 May 27; 24: 88; used with permission

Figure 4: Anoscope

Kurt G. Davis, MD

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Interpretation of numbers

Regardless of the language in which the content is displayed, numerals are displayed according to the original English-language numerical separator standard. For example 4 digit numbers shall not include a comma nor a decimal point; numbers of 5 or more digits shall include commas; and numbers stated to be less than 1 shall be depicted using decimal points. See Figure 1 below for an explanatory table.

BMJ accepts no responsibility for misinterpretation of numbers which comply with this stated numerical separator standard.

This approach is in line with the guidance of the International Bureau of Weights and Measures Service.

Figure 1 – BMJ Best Practice Numeral Style

5-digit numerals: 10,000

4-digit numerals: 1000

numerals < 1: 0.25

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// Acknowledgements:

Mr Mohamed A. Thaha, Mr Jayan D. Jayasinghe, and Professor Robert J.C. Steele would like to gratefully acknowledge Dr Kurt G. Davis, the previous contributor to this topic.
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