

Anal and perianal disorders

Bruce D George

Abstract

Most anal diseases can be diagnosed by a careful history and examination. Management of haemorrhoids involves exclusion of more serious pathology, adequate explanation of the disorder, and dietary and defecatory advice. Moderate haemorrhoids may be treated with out-patient procedures, such as injection sclerotherapy or rubber-band ligation. Surgical haemorrhoidectomy is usually indicated in patients with persistently prolapsing haemorrhoids, haemorrhoids with a significant external component or haemorrhoids that have been thrombosed. Anal fissures are managed initially with bulking laxatives and non-constipating analgesics. Glyceryl trinitrate ointment 0.2–0.4%, topically twice daily for 6 weeks, is now the standard first-line specific pharmacological treatment. Botulinum toxin injection is commonly used as second-line non-surgical treatment. Lateral internal sphincterotomy is indicated for patients with fissures that do not heal after pharmacological management, although it is associated with a small risk of impaired continence. Anal fistulae and abscesses represent extremes of a single disease spectrum. Perianal abscesses should be treated by prompt adequate surgical drainage. Fistulae should be thoroughly evaluated by ultrasound or magnetic resonance imaging (MRI) to assess the relationship of the fistulae to the sphincter muscles. Low fistulae are treated by fistulotomy. High fistulae require more complex sphincter-preserving techniques. Patients with faecal incontinence should be investigated with anal physiological tests and endo-anal ultrasound. Conservative treatment includes dietary modification, constipating drugs, physiotherapy and biofeedback. Surgical treatment should correct specific abnormalities, such as rectal prolapse or discrete sphincter defects. Sacral nerve stimulation represents a new, expensive but relatively non-invasive treatment option for patients with faecal incontinence after failure of first-line conservative therapy. Patients with functional constipation should be assessed to distinguish slow transit from obstructed defecation. New techniques, such as laparoscopic ventral rectopexy, may be appropriate for selected patients with intractable obstructed defecation.

Keywords Anal abscess; anal fissure; anal tumour; faecal incontinence; fistula; haemorrhoids; pruritus ani; sacral nerve stimulation

Anatomy

Lining of anal canal (Figure 1) – the upper anal canal is lined with columnar epithelium; it has an autonomic nerve supply and is insensitive, except to distension. The lower anal canal is lined with stratified squamous epithelium similar to the adjacent skin, but without skin appendages; it has a somatic nerve supply and is exquisitely sensitive. The anal transition zone lies between these two areas, approximately at the level of the dentate line. The anal submucosa comprises largely blood vessels, some smooth muscle and connective tissue. About four to eight mucus-secreting glands open into the anal canal just above the dentate line.

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Anal sphincter musculature (Figure 2) – the anal canal may be considered to be surrounded by a small inner ‘doughnut’ and an outer large doughnut. The small doughnut is the internal anal sphincter and is the thickened continuation of the circular smooth muscle layer of the rectum. It is responsible for 70–80% of the resting tone in the anal canal and is under autonomic and local nervous control. The outer, larger doughnut is the external anal sphincter, which is a striated muscle supplied by the pudendal nerve (S2, S3, S4). It is under voluntary control and is responsible for reflex increases in anal canal pressure. At the upper border of the external sphincter is the sling-like puborectalis muscle, which angulates the anorectal junction forwards and is thought to be particularly important in maintaining continence.

Physiology

Continence is defined as the ability to perceive, retain and excrete the rectal contents at socially appropriate times. This depends on a combination of factors.

A mechanical barrier to defecation – provided by the anal muscles and the anal cushions.

Normal anorectal sensation – the rectum is sensitive to distension only. Transient equalizations of pressure between the rectum and the anal canal allow the rectal contents to come into contact with the sensitive lining of the anal canal. This process has been termed ‘sampling’ and is thought to be important in discriminating between gas, liquid and solids.

Rectal reservoir – the rectum, and probably the sigmoid colon, provide a reservoir to store faeces before defecation.

Stool consistency – excessively watery stools may result in leakage despite an otherwise normal sphincter mechanism.

Reflex responses – increases in intra-abdominal pressure (e.g. during coughing or straining) threaten continence. When the intra-abdominal pressure increases, stretch receptors in the pelvic floor are stimulated, resulting in reflex contraction of the striated muscles of the anal sphincter and thereby protecting continence.

Ability to evacuate – faecal contents are delivered to the rectum by colonic mass movements. Normal evacuation involves raising intra-abdominal pressure by a Valsalva manoeuvre, descent of the pelvic floor and relaxation of internal and external sphincters. The precise co-ordination of this process is poorly understood. Loss of this ability results in troublesome constipation and, sometimes, overflow incontinence.

Haemorrhoids

Early Egyptian papyri (1500 BC) refer to a poultice of myrrh, frankincense, celery, coriander and salt for the treatment of ‘dislocation of the anus’. It is estimated that most people will suffer from haemorrhoids at some point in their life. The prevalence is estimated to be about 4% of the population.

Pathophysiology

The submucosa of the anal canal comprises numerous arteriovenous channels surrounded by connective tissue. Physiological swelling of this layer has been termed ‘anal cushions’ and may have a role in the fine control of anal continence. Haemorrhoids may be defined as enlarged, prolapsed or

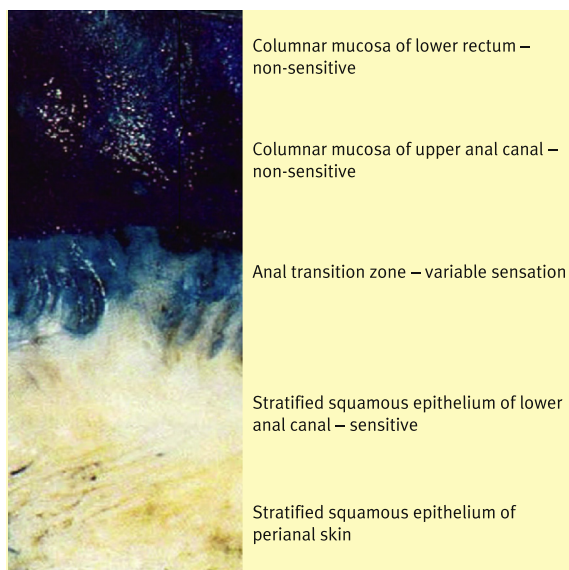


Figure 1 Opened strip of anal canal.

symptomatic anal cushions. The cause of haemorrhoids is probably multifactorial. Relaxation of supportive connective tissue, as occurs in pregnancy, or excessive straining necessitated by constipation are likely to be involved. High pressure in the internal sphincter has been observed in haemorrhoids. This may contribute to increased shearing forces during defecation or may reduce venous return leading to submucosal vascular engorgement.

Classification

Haemorrhoids arising from the upper part of the anal canal lined by columnar mucosa are internal haemorrhoids. Those arising from the lower anal canal lined by squamous epithelium are external haemorrhoids.

They are classified as first-degree (bleed but do not prolapse), second-degree (prolapse with straining but reduce

spontaneously) and third-degree (prolapse with straining and require digital reduction).

Clinical features

The common symptoms are bleeding, prolapse and discomfort.

- Bleeding is characteristically bright red, and drips into the toilet bowl or may be seen on the paper after wiping.
- Prolapse of haemorrhoids is usually noticed in association with defecation.
- Discomfort around the anus is common in second-degree and third-degree haemorrhoids. Severe pain suggests another pathology (e.g. fissure, abscess).
- Pruritus and minor soiling occur in patients with frequently prolapsing haemorrhoids.
- Mucus discharge and feeling of incomplete emptying.

Examination of haemorrhoids relies on inspection and proctoscopy, both at rest and during straining. The presence of external haemorrhoids (Figure 3) should be noted. True external haemorrhoids are similar to internal haemorrhoids in that they contain blood vessels and connective tissue, but they are lined with stratified squamous epithelium. They usually occur in association with internal haemorrhoids. External haemorrhoids should be distinguished from other lesions at the anal margin (e.g. skin folds and tags), which generally require no treatment.

The most common complication of haemorrhoids is thrombosis of prolapsed haemorrhoids. This acutely painful condition is easily diagnosed on inspection.

Management

Exclusion of more serious pathology, adequate explanation of the disorder, dietary advice (high fibre intake) and defecatory advice (avoid excessive straining or prolonged sitting on the toilet) are required in all patients. In many patients, no additional treatment is necessary.

It is important to exclude upstream pathology before attributing bleeding to haemorrhoids. In young adults with typical anal bleeding, clinical examination, proctoscopy and rigid sigmoidoscopy are sufficient. Colonoscopy is advisable when the symptoms are atypical, when there are other symptoms of gastrointestinal pathology, and in older patients.

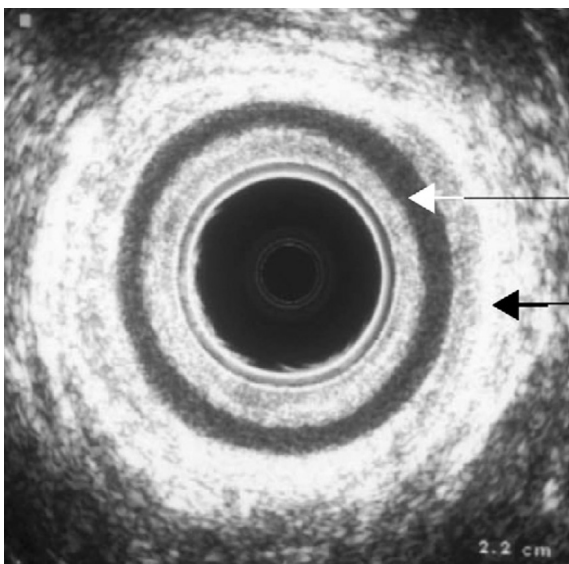


Figure 2 Endoluminal ultrasound scan of normal anal canal (white arrow, internal anal sphincter; black arrow, external anal sphincter).

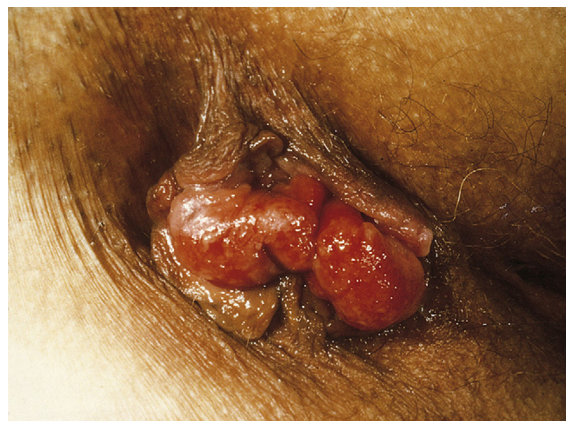


Figure 3 Prolapsing haemorrhoids.

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