Haemorrhoids - Epidemiology, risk factors, clinical features and management

Anatomy and physiology

Haemorrhoids are one of the most common anal disorders encountered in primary care. Haemorrhoids are defined as the symptomatic enlargement and distal displacement of the normal anal cushions.1 These cushions are usually found in three main locations: left lateral, right anterior, and right posterior (3, 7 and 11 o’clock positions).2 These vascular cushions participate in the drainage of the anal canal. It has also been suggested that these cushions intensify the action of the anal sphincter mechanism, thereby contributing to continence.

There are two types of haemorrhoids: internal and external. Internal haemorrhoids arise above the dentate line, are viscerally innervated and therefore painless. External haemorrhoids can be painful because they originate below the dentate line and have a somatic innervation.3 Internal haemorrhoids are further subdivided according to the degree of prolapsed (table 1).

Epidemiology and risk factors

Studies on the prevalence of haemorrhoids are rare and have varying results. Johnson and Sonnenberg estimated a prevalence of 4.4% in US adults, peaking in those aged 45–65 years.4 Riss et al. in a study of 976 patients attending for colorectal cancer screening found that 38.93% suffered from haemorrhoids.5 Only half of these reported symptoms.

Factors that increase intra-abdominal pressure are thought to contribute to the development of haemorrhoids. These include prolonged straining, inadequate fibre intake, constipation, diarrhoea, ascites and pelvic space-occupying lesions.2 Constipation and prolonged straining also increase the shearing force on the anal cushions, further predisposing to the formation of haemorrhoids.1 In addition, pregnancy predisposes women to haemorrhoids, however these usually resolve after delivery.3

Clinical Features

Patients frequently present with painless rectal bleeding. Many treat the initial symptoms without seeking medical advice and only present when symptoms worsen. Other symptoms may include a painful mass, anal swelling, discharge, discomfort, soiling, hygiene problems and pruritus ani. External haemorrhoids are more often associated with anal discomfort because of engagement. If thrombosis of external haemorrhoids occurs, this causes acute pain. On the other hand, internal haemorrhoids become symptomatic when they prolapse, thrombose, bleed or become ulcerated.

Differential diagnosis includes other causes of these symptoms. It includes colorectal cancer, anal cancer inflammatory bowel disease, anal condylomata, anal fissure, perianal abscess, skin tags, perianal Crohn’s disease, rectal prolapse and fistulas.

Definite diagnosis relies on an accurate history and a careful clinical examination which should include a digital rectal examination and anoscopy in the left lateral position.1 A complete evaluation of the colon is recommended in the following clinical scenarios:6

- Iron deficiency anaemia;
- Positive faecal occult blood test;
- Age ≥ 50 years with no complete colon evaluation within 10 years;
- Age ≥ 40 years, with positive family history for a single first-degree relative with adenoma or colorectal carcinoma diagnosed at age < 60 years and no complete examination within 10 years;
- Age ≥ 40 years, with positive family history for two or more first-degree relative with adenoma or colorectal carcinoma diagnosed at age < 60 years and no complete examination within 3-5 years;
- Any history or physical finding indicating malignancy or inflammatory bowel disease.

Management

The management of haemorrhoids depends on the degree and severity of symptoms and it ranges from dietary and lifestyle modification to radical surgery.

(a) Dietary and lifestyle modification

An increase in dietary fibre and oral fluids may help eliminate straining during defecation thereby reducing the damage caused by the shearing action of passing hard stool on the anal mucosa. Alonso-Coello et al.9 in a meta-analysis of seven randomised clinical trials (RCTs) of symptomatic patients, confirmed the beneficial effect of fibre in the treatment of symptomatic haemorrhoids for relieving overall symptoms such as bleeding, pain, prolapsing and itching.

Table 1: Classification of internal haemorrhoids

<table>
<thead>
<tr>
<th>Grade</th>
<th>Definition</th>
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<tr>
<td>Grade 1</td>
<td>May bleed but do not protrude</td>
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<tr>
<td>Grade 2</td>
<td>Protrude with defecation but reduce spontaneously</td>
</tr>
<tr>
<td>Grade 3</td>
<td>Protrude but can be manually reduced</td>
</tr>
<tr>
<td>Grade 4</td>
<td>Permanently prolapsed</td>
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Besides increasing dietary fibre, other lifestyle modifications may play a role in the treatment or prevention of haemorrhoids. These include reducing fat consumption, regular exercise, improving anal hygiene, avoiding straining and reading on the toilet, and avoiding medication that causes constipation or diarrhoea.

(b) Medical Treatment

Oral flavonoids

Oral flavonoids are thought to work by increasing venous tone, reducing venous permeability, facilitating lymphatic drainage and by exerting an anti-inflammatory effect. Flavonoids have been used in a number of conditions including chronic venous insufficiency, lymphoedema and haemorrhoids.

A Cochrane systematic review by Perera et al. conducted a meta-analysis aimed at evaluating the impact of flavonoids on those symptoms considered to be important to patients with symptomatic haemorrhoids. The authors included fourteen published or unpublished RCTs comparing any type of flavonoids to placebo or no therapy, in patients with symptomatic haemorrhoids. These fourteen trials randomized 1514 patients. Meta-analyses using random-effects models suggested that flavonoids decrease the risk of not improving or of persisting symptoms by 58% (RR 0.42; 95% CI 0.28 to 0.61) and showed an apparent reduction in the risk of bleeding (RR 0.33; 95% CI 0.19 to 0.57), persistent pain (RR 0.35 95% CI 0.18 to 0.69), itching (RR 0.65 95% CI 0.44 to 0.97) and recurrence (RR 0.53 (95% CI 0.41 to 0.69)). This meta-analysis is, however, limited by the important heterogeneity present for all the outcomes, and by the potential of publication bias as there was a failure to identify additional unpublished studies with small or absent treatment effects, thereby possibly overestimating the true effect of treatment.

Topical treatment

Topical treatment aimed at controlling the symptoms of haemorrhoids can contain local anaesthetics, corticosteroids, and anti-inflammatory drugs in the form of creams and suppositories. Many of these preparations help to alleviate symptoms of pruritus and discomfort. However, there are no randomized trials suggesting a reduction in bleeding or prolapsing. Caution should be used when prescribing corticosteroid-containing local preparations, since although they improve local perianal inflammation, their prolonged use can cause thinning of the perianal skin.

(c) Non-operative treatment

Sclerotherapy

Sclerotherapy is recommended as a treatment for Grade 1 and 2 haemorrhoids. Sclerotherapy involves the injection of chemical agents to create a fixation to the underlying mucosa by fibrosis. Possible complications of this procedure include transient precordial and upper abdominal pain, mucosal ulceration and necrosis and, rarely, prostatic abscess or retroperitoneal sepsis. Antibiotic coverage is indicated in patients with predisposing valvular disease or immunodeficiency.

Rubber band ligation

Ligation of the haemorrhoidal tissue with a rubber band causes ischemic necrosis, ulceration and scarring, leading to fixation of the connective tissue to the rectal wall. The rubber bands are placed above the dentate line. Complication rates are low and include vasovagal attacks and persistent anal pain. Other reported complications include late haemorrhage (1-2 weeks after the procedure),
thrombosed external haemorrhoids, ulceration, slippage of the rubber band, pelvic sepsis and, very rarely, Fournier's gangrene. The risk of delayed bleeding makes rubber band ligation contraindicated in patients on anticoagulants.

Infrared coagulation
This procedure involves the application of radiation to the base of the haemorrhoid causing coagulation, occlusion and sclerosis of the haemorrhoidal tissue. The scarring that ensues reduces blood flow to the haemorrhoid. Success rates of infrared coagulation are lower than those of rubber band ligation 7 but it can safely be offered to those on anticoagulant therapy. 2

(4) Operative treatment
Haemorrhoidectomy
The most effective treatment for haemorrhoids with the lowest rate of recurrence compared to other treatments is haemorrhoidectomy. 22 An elliptical incision over the haemorrhoidal complex is done, the haemorrhoidal complex is then mobilized from the underlying sphincter and subsequently excised. The wound is then sutured. 2 Indications include failure of non-operative management, strangulation or thrombosis of haemorrhoids, concomitant anorectal conditions e.g. anal fissure or fistula, and patient preference. 2,23

Complications of haemorrhoidectomy include post-operative pain 24, acute urinary retention, post-operative bleeding, septic complications, wound breakdown, delayed wound healing, loss of anal sensation, prolapsing of the mucosa, anal stricture, and fecal incontinence. 25 A Cochrane review of three RCTs by Shamugam et al. 26 comparing excisional haemorrhoidectomy to rubber band ligation showed no difference in the incidence of urinary retention, haemorrhage and anal stenosis. Patient satisfaction was similar in both groups. Excisional haemorrhoidectomy in patients with Grade 3 haemorrhoids resulted in less symptom recurrence and a reduced need for subsequent procedures. The authors concluded that rubber band ligation can be considered to be the treatment of choice for Grade 2 haemorrhoids while excisional haemorrhoidectomy should be reserved to Grade 3 haemorrhoids or following recurrence after rubber band ligation.

Stapled haemorrhoidopexy
In stapled haemorrhoidopexy a circular device excises a ring of redundant rectal mucosa proximal to the haemorrhoid and resuspends the haemorrhoid back within the anal canal interrupting the blood supply to the haemorrhoidal tissue. 27 Post-operatively, patients have a circular staple line above the dentate line. Post-operative pain is less than with excisional haemorrhoidectomy but there is a higher risk of recurrent haemorrhoids. 28,29 Stapled haemorrhoidopexy is mainly reserved for patients with circumferential prolapsing haemorrhoids and those having ≥3 lesions of advanced internal haemorrhoids. 1

Conclusion
The treatment of haemorrhoids depends on the degree and severity of symptoms. It includes dietary and lifestyle modifications, medical treatment such as flavonoids and topical treatment and, where indicated, surgical treatment.

References