The acute management of haemorrhoids

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ABSTRACT

INTRODUCTION Although the acute thrombosis and strangulation of haemorrhoids is a common condition, there is no consensus as to its most effective treatment.

METHODS A PubMed search was undertaken for papers describing the aetiology and treatment of the acute complications of haemorrhoids.

RESULTS The anatomy and treatments for strangulated internal haemorrhoids and thrombosed perianal varices are discussed. Studies of the effectiveness and complications of conservative and operative treatments are reviewed.

CONCLUSIONS Ambiguities exist in the terminology used to describe the two separate pathologies that make up the acute complications of haemorrhoids. These complications have traditionally been treated conservatively. There is evidence that early operative intervention for strangulated internal haemorrhoids is safe and effective. A suggested algorithm for treatment is given, based on the published literature.

KEYWORDS

Haemorrhoids – Piles – Acute – Thrombosed – Strangulated

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The acute thrombosis and strangulation of haemorrhoids is both painful and debilitating, and a major cause of morbidity. While attempts have been made to establish a consensus for the treatment of chronic haemorrhoids,^{1,2} there is little consistency in the management of patients presenting acutely. The older surgical texts advised a conservative approach, and many surgeons remain reluctant to operate on patients presenting as an emergency despite some evidence to the contrary.

Methods

A PubMed search was performed using the search terms ‘haemorrhoids’, ‘piles’, ‘acute haemorrhoids’, ‘thrombosed haemorrhoids’, ‘strangulated haemorrhoids’, ‘perianal haematoma’ and ‘perianal varix’. Further relevant studies were sought from the references cited in these articles.

Results

Between 4.4% and 36.4% of the general population are thought to be affected with haemorrhoids³ although data on their prevalence are hard to obtain. It is not known how many of these patients suffer acute complications and their sequelae.

Anatomy

Haemorrhoids are made up of vascular, muscular and connective tissue elements.⁴ Thomson showed that the

vasculature of the anal canal was condensed in ‘cushions’ of tissue, forming the superior (or internal) haemorrhoidal plexus.⁵ Within these veins, he found discrete dilations. Those found below the dentate line were ‘fewer in number and with a tendency to be larger in size’, forming the inferior haemorrhoidal plexus. Thomson also demonstrated tiny arteriovenous communications between vessels. This explains why haemorrhoidal bleeding is bright red and has the same pH as arterial blood.⁶

A web of connective tissue surrounds the blood vessels of the superior haemorrhoidal plexus, derived from the conjoined longitudinal coat of the rectum.^{7,8} Smooth muscle elements are also present, termed ‘Treitz’s muscle’.⁷ Degeneration of these muscular and fibrous elements leads to hypertrophy and fragmentation of the fibres, and loss of the normal support to the submucosa and its vasculature.⁴ The muscle-to-collagen ratio is decreased in the haemorrhoids.⁸ When anal cushions bleed or prolapse, they become known as haemorrhoids.

Strangulated haemorrhoids

Prolapse of haemorrhoids is usually a chronic phenomenon, cumulative over time. Acute prolapse, where the haemorrhoidal mass becomes trapped by the sphincter outside the anus, can lead to obstruction of venous return, oedema and strangulation. Patients present with acute pain. If untreated, this can be severely incapacitating for several weeks.

Treatments are often conservative, including bed rest, analgesia, hot baths, ice packs, soothing topical applications and stool softeners. Resolution does eventually occur but there is a high incidence of continuing symptoms and a need for subsequent haemorrhoidectomy.

Conservative treatment

One of the few studies of the longer-term consequences of conservative management of an acute episode reviewed 92 patients presenting to St Mark's Hospital over a 5-year period.⁹ Only 12 patients (13.0%) had no further trouble from their haemorrhoids. Sixty-four patients (54.7%) were advised to undergo a haemorrhoidectomy for continuing symptoms. The study suggests that thrombosis is 'merely an episode in the natural history of the disease and does not influence subsequent symptoms'.

Operative treatment

A fear of surgical complications (including portal pyaemia, secondary haemorrhage, anal stenosis and incontinence) led older textbooks to advocate a non-operative approach in the acute situation. Numerous studies since have recommended otherwise^{10–15} and fears of systemic infection appear unfounded.^{16,17}

Identifying the anatomy and leaving adequate mucocutaneous bridges can cause technical difficulties when operating on strangulated haemorrhoids. However, Hansen and Jorgensen observed that the pedicles are usually unaffected and well defined.¹⁸ Smith confirmed this histologically; of 15 specimens examined, most were free of thrombosis, and all were free of ulceration and inflammatory cells at the pedicle.¹⁹

In an attempt to circumvent the potential technical difficulties of radical haemorrhoidectomy in the acute situation, Heald and Gudgeon described a limited haemorrhoidectomy of the largest haemorrhoid with a four-finger anal stretch.²⁰ Of 21 patients, 5 required subsequent injection for bleeding but after 2 years no patients reported a major recurrence of symptoms.

Haemorrhoidectomy

Authors of a number of case series in the 1960s and 1970s advocated emergency haemorrhoidectomy for acute haemorrhoids.^{12,13,18,19,21,22} None of these found the septic complications feared as a result of operating in the acute setting. Mazier describes 400 patients who underwent an 'emergency haemorrhoidectomy' although only 137 patients were known to have symptoms of less than 4 days' duration and only half had pain, calling into question his definition of 'acute disease'.²¹ Nine patients suffered postoperative bleeding that necessitated a return to theatre. Two patients had recurrences that were treated conservatively. Of the five patients who developed anal stenosis following surgery, all had had a four-quadrant haemorrhoidectomy.

In 1994 Eu *et al* compared haemorrhoidectomy within 12 hours of admission in 204 patients with acutely prolapsed haemorrhoids with 500 elective procedures; 1.2% of elective and 1.0% of emergency patients had postoperative bleeds requiring surgical intervention.¹¹ There was no significant difference in recurrence between the two groups.

In a more recent retrospective study of 649 patients operated on for haemorrhoids, 104 were classified as emergencies (being operated on within 24 hours of admission).¹⁴ Rates of postoperative bleeding were not significantly different between the groups. Anal stenosis was seen in one patient (0.2%) in the elective group and in seven patients (6.7%) in the emergency group. These responded to dilation and did not require operative correction. Only one recurrence was seen at three years (0.2%) and this was in the elective group.

Saleeby *et al* reported a series of 25 pregnant women who underwent acute haemorrhoidectomy under local anaesthesia for strangulation.²³ At longer-term follow-up (up to six years), six women required additional treatment, four requiring further haemorrhoidectomy. Conservative management of haemorrhoids is usually favoured in pregnant women owing to the operative risks to the mother and fetus. This series suggests that surgery under local anaesthesia is possible in these circumstances.

The use of stapled haemorrhoidopexy (Procedure for Prolapse and Haemorrhoids [PPH]) in the acute setting is not widespread.² A study from Hong Kong randomised 41 patients with acute thrombosed haemorrhoids (with symptoms of <5 days) to either stapled or open haemorrhoidectomy.²⁴ The PPH technique was modified in the acute setting to include stab incisions to extrude any thrombus and an anal stretch to reduce oedema. The purse string suture was placed 3cm above the dentate line (1–2cm lower than usual) so the excision included haemorrhoid tissue – a true 'stapled haemorrhoidectomy'.

Microscopic muscle incorporation in the resection specimens occurred in 43% of the PPH group although only transient flatus incontinence was reported and no urgency.²⁴ Patients in the PPH group had a significantly lower average pain score and a significantly shorter time to becoming pain free. One patient in the open haemorrhoidectomy group required readmission for haemorrhage. Five patients in the open haemorrhoidectomy group (but no PPH patients) developed recurrent symptoms at follow-up of a year.

Brown *et al* performed a similar study on 30 patients albeit with no modification of the standard PPH technique.²⁵ Two patients in each group had ultrasonographic evidence of internal sphincter damage following surgery, although this was asymptomatic in all patients. The 17 patients who had the stapled procedure had higher pain scores immediately postoperatively than the 18 in the conventional haemorrhoidectomy group. At two weeks, however, perceived pain (particularly on defecation) was significantly less in the stapled group. The authors speculated that the greater pain experienced immediately postoperatively in the stapled group reflected the fact that the thrombosed area was not removed but merely drawn up inside the anal canal. The follow-up duration in this study was only six weeks. In Kang *et al*'s case series of 30 patients who had a stapled procedure for 'acute haemorrhoidal crisis', 5 (17%) required reoperation for recurrence.²⁶

Thrombosed perianal varices

Thrombosis of the veins of the inferior haemorrhoidal plexus often presents acutely as a so-called 'perianal

haematoma'. Thomson described this histologically and favoured the term 'clotted venous sacculae' since it was strictly subanodermal (rather than perianal) and not a true haematoma (as there was no evidence of haemorrhage).²⁷ The term 'thrombosed perianal varix' is sometimes used.²⁸

Oh reported a series of 159 patients with this condition.²⁹ He found that it commonly occurred in younger patients (mean age 36 years), was twice as common in male patients and an episode of constipation was often the precipitating event. Ganchrow *et al* examined 127 specimens of excised thrombosed haemorrhoids.¹⁰ All thrombi were intravascular, with no evidence of extravasation or 'haematoma'. More than half of the patients were able to associate the onset of their symptoms with acts such as lifting heavy objects or straining. The combination of venous stasis and local trauma was proposed as the cause of thrombosis.

Treatment

Thrombosed perianal varices usually present as a single, tense, painful, bluish lump at the anal margin, with a clear line of demarcation between the swelling and the mucosa of the anal canal.³⁰ When left, spontaneous resolution occurs over 7–10 days. Rarely, the clot may erode through the skin and discharge itself. If the presentation is delayed and the pain is resolving, the thrombosed varix can be treated conservatively with analgesics and reassurance.

Nifedipine (a calcium channel antagonist) has been shown both *in vitro*³¹ and *in vivo*³² to relax the internal sphincter and prevent the spasm, which may contribute to the pain. A randomised trial of 98 patients with an acutely thrombosed perianal varix compared 0.3% topical nifedipine with a placebo.³³ Pain was absent or modest in 86% of the nifedipine group compared with 14% of the control group at one week. At two weeks, total remission of pain and swelling was present in 92% of the nifedipine users versus 46% of controls. Topical nitroglycerin has also been used in this context³⁴ although this has not been subjected to a randomised trial.

If seen within the first 24–48 hours, evacuation of the clot under local anaesthesia is recommended.^{28,30} Care should be taken to remove all of the visible clot. It is not necessary to pack the cavity. A circumferential rather than a radial incision may help prevent a skin tag forming after healing.³⁵

A large retrospective study describes evacuation of thrombosed perianal varices under local anaesthesia in 340 patients.¹⁵ Operative indications were severe pain, necrosis or perforation of the underlying skin. Bleeding occurred in one patient (0.3%) and seven patients (2.1%) developed a fistula or abscess. Within the 28-month follow-up period, 22 patients (6.5%) developed a recurrence that required further treatment under local anaesthesia.

Conclusions

The terms 'acute haemorrhoids', 'thrombosed external haemorrhoids', 'strangulated haemorrhoids', 'perianal thrombosis' and 'perianal haematoma' are often used

interchangeably in the literature. These terms do not always reflect the anatomical and histological appearances of the pathology, and confuse two distinct conditions: the acutely prolapsed haemorrhoid that has become strangulated and the thrombosed perianal varix. These are separate pathological entities requiring different treatments. We propose the use of the term 'strangulated haemorrhoids' for internal haemorrhoids that have prolapsed acutely and become painful through oedema, ischaemia and sometimes gangrene. Thrombosis may or may not be present histologically³⁶ and this may or may not be reflected clinically.¹⁰ The term 'thrombosed perianal varix' best describes a painful thrombosis in the inferior haemorrhoidal plexus – not strictly a haemorrhoid, nor a 'perianal haematoma'. The use of the term 'thrombosed external haemorrhoid' to refer to both conditions is ambiguous and misleading.

Studies of the outcome of conservative management for strangulated haemorrhoids are limited.⁹ A fear of infection after acute haemorrhoidectomy appears to be unfounded and complication rates are similar to those found in the elective setting. A balance is struck at operation between removing too much tissue and risking a stenosis or removing too little and risking recurrence. Those studies with a low recurrence rate had higher incidence of stenosis.^{14,18} Heald and Gudgeon's work may suggest that a more conservative approach to removing tissue is to be advocated but their use of an anal stretch must be questioned.²⁰ Stapled haemorrhoidopexy may offer another surgical option^{24–26} although removing a cuff of mucosa above the haemorrhoids may lead to resolution of symptoms simply by pulling them up into the anal canal, without excising the ischaemic tissue.

There was evidence of internal anal sphincter damage (either histological or on ultrasonography) after PPH in some patients. This was asymptomatic but the follow-up duration was only six weeks in one study²⁵ and one year in the other.²⁴ Sphincter damage has also been identified following emergency open haemorrhoidectomy.³⁷ Of nine patients who underwent endoanal ultrasonography after this procedure, six (66%) were found to have evidence of internal anal sphincter damage. All but one of these patients had been operated on by a trainee. Three of these patients described minor degrees of incontinence to flatus but a similar number of patients treated conservatively (with normal ultrasonography) also described this. This potential for sphincter injury must be borne in mind when operating in the acute setting.

Immediate surgical treatment prevents the social and economic consequences of a prolonged recovery during conservative treatment, and avoids the need for surgery at a later date. The timing of this surgery is important, however. The natural history of the condition is of spontaneous resolution over a few days and the benefits of surgery therefore lessen with the improvement of symptoms. We suggest an algorithm for the acute management of haemorrhoids based on the evidence presented above (Fig 1). This takes into account the duration of symptoms and may be tailored according to the expertise available. As with all

haemorrhoid treatments, the primary aim must be to treat the symptoms and not merely their appearance. A fuller understanding of the anatomy and pathophysiology of this condition will help to inform these management choices.

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