

Presentation, Classification and Surgical Management of Hemorrhoids

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Received: December 07, 2019; **Published:** December 24, 2019

Abstract

Hemorrhoids/piles are common conditions that can be symptomatic in only 4% of the patients. We performed an extensive literature search of the Medline, Cochrane, and EMBASE databases using the medical subject headings (MeSH) terms. Papers discussing presentation, classification and surgical management of hemorrhoids were screened for relevant information. There were no limits on date, language, age of participants or publication type. The hemorrhoids are classified into external and internal ones, and the internal hemorrhoids are furtherly subclassified into four grades (according to the prolapse degree). Treatment is mainly conservative followed by using office-based procedures, while the surgical option is used only whoever indicated.

Keywords: Hemorrhoids; Presentation; Classification; Surgery

Introduction

Hemorrhoids/piles are normal vascular structures located in the anal canal, they are origination from arteriovenous connective tissue channels that drain into the inferior and superior hemorrhoidal veins [1]. Their main role is to work as cushions and thus helping in stool continence by providing bulk to the anal canal [2]. Hemorrhoidal disease is the comment among diseases of the rectum and large intestine [3]. Symptoms are considered to be the result of downward displacement of the vascular cushions due to the disruption of the supporting suspensory (Trietz) muscle [1]. Precipitant factors include straining at stool and neglecting the first urge to defecate [1,4]. Genetic and dietary factors also predispose to the development of hemorrhoids [4].

The estimated worldwide prevalence ranges from 2.9 to 27.9% of the population with symptomatic hemorrhoids present in more than 4% [5,6]. Approximately, one-third of patients seek medical advice [5]. The age distribution demonstrates a Gaussian distribution with a peak incidence between 45 and 65 years and subsequent decline after the age of 65 years [7]. The condition is rare before 20 years of age with an overall prevalence of about 25% over 30 years and 50% over 50 years and a decline after the seventh decade [6,8]. Men are more frequently affected than women with approximately 60% of hospital admissions with hemorrhoids are men [9].

Hemorrhoids are classified into either internal (located proximal to the dentate line), external (located distal to the dentate line) or mixed (located both proximal and distal to the dentate line) [10]. Depending on the degree of prolapse, internal hemorrhoids are classified into four categories (I to IV) [11]. The severity of symptoms does not necessarily correlate with the degree of hemorrhoids [12,13]. The treatment options for symptomatic hemorrhoids have varied with time as clinicians seek better options for effective symptom control [12,13]. The various treatment options have included conservative medical management, non-surgical treatments and surgical techniques [12,13]. In this study, we aim to provide an overview of the presentation, classification and surgical management of hemorrhoids.

Methods

We performed an extensive literature search of the Medline, Cochrane, and EMBASE databases on 28 November 2019 using the medical subject headings (MeSH) terms “hemorrhoids [MeSH Terms]”. Papers discussing presentation, classification and surgical management of hemorrhoids were screened for relevant information. There were no limits on date, language, age of participants or publication type.

Classification hemorrhoidal disease

Hemorrhoids are generally classified according to their relation to the dentate line; whether located distal to it (external hemorrhoids), proximal to it (internal hemorrhoids) or both proximal and distal to it (mixed hemorrhoids) [11,14,15]. There is no widely accepted grading system for the external hemorrhoids; however, internal ones are classified according to the degree of prolapse from the anal canal into four grades (Table 1) [11,14,15].

Grade	Description
Grade I	Hemorrhoids are visualized on anoscopy and may bulge into the lumen but do not prolapse below the dentate line
Grade II	Hemorrhoids prolapse out of the anal canal with defecation or with straining but reduce spontaneously
Grade III	Hemorrhoids prolapse out of the anal canal with defecation or straining and require manual reduction
Grade IV	Hemorrhoids are irreducible and may strangulate

Table 1: Grading of the internal hemorrhoids [11,14,15].

Presentation of hemorrhoidal disease

About 40% of the patients suffering from hemorrhoids will remain asymptomatic [16]. Patients with symptoms usually seek medical attention for minor incontinence, hemorrhoidal bleeding, perianal pruritus, and pain [17]. Patients presenting with acute pain and a palpable perianal mass; would mostly have hemorrhoidal thrombosis [17].

Hemorrhoidal bleeding is typically a bright red in color and maybe either associated with defecation (at the end) or a spontaneous drip [18]. However, the bleeding can be more severe and increased by straining, with a subsequent iron deficiency anemia (IDA); in chronic blood loss [18]. In such cases, the patient may present with the symptoms of IDA; including malaise, headache, irritability, and exercise intolerance [18]. In cases of prolapsed internal hemorrhoids, fecal soilage, mucus secretions, a sensation of wetness or fullness at the perianal area may be present [2].

In the same context, perianal skin irritation and associated itching may be present due to multiple factors [19]. The accumulation of mucus secretions, originating from the columnar epithelium covering of hemorrhoids, in the perianal skin; is one of the irritating factors

[19]. Another factor is the perianal irritation, by the precipitating fecal material, due to the difficult cleaning from the skin tags associated with external hemorrhoids [19]. Furthermore, the aggressive cleaning of the perianal area would cause irritation and exposure of denuded skin to feces [19].

Surgical treatment of hemorrhoidal disease

Conservative management is the initial treatment of choice for hemorrhoid patients, followed by office-based procedures [13,20]. In case of failure of the two aforementioned methods, the persistence of symptoms, advanced grades of internal hemorrhoids (Grade III and IV), external hemorrhoids with substantial external skin tags and mixed hemorrhoids; the surgical treatment is indicated [13,20] (Table 2).

Treatment	Grade I	Grade II	Grade III	Grade IV	Acute thrombosis and strangulation
Conservative (Dietary and lifestyle modification)	X	X	X	X	X (after acute event)
Office-based procedures					
Rubber band ligation	X	X	X		
Sclerotherapy	X	X			
Infrared coagulation	X	X			
Surgical procedures					
Conventional hemorrhoidectomy			X	X	X (emergent)
Stapled hemorrhoidopexy			X	X	
Doppler-guided hemorrhoid artery ligation		X	X		

Table 2: Treatment options for hemorrhoids.

External hemorrhoidectomy

External hemorrhoids do not require excision; except in cases of thrombosed hemorrhoids or in symptomatic large external hemorrhoids [13,20]. Noteworthy, the excision of a thrombosed external hemorrhoid would result in immediate relief of pain [21]. There is a 5% to 19% risk of recurrence after excision of a thrombosed hemorrhoid and this risk can reach up to 30% in evacuation by a simple incision [22-24]. The excision is done by a simple elliptical incision around the hemorrhoidal tissue (Figure 1) [25].

Internal hemorrhoidectomy

There are multiple techniques of internal hemorrhoidectomy; including conventional hemorrhoidectomy (CH), hemorrhoidal artery ligation (HAL), and stapled hemorrhoidectomy (SH) [13,20]. The choice of the appropriate surgery is mainly determined by the surgeon’s decision, preference, expertise and the availability of the different surgical equipment [24].

CH has the lowest recurrence rate; however, it is associated with a high complication rate [26]. Using the advanced electrosurgical devices in CH may decrease the complication rates but with higher costs [26]. In contrast, HAL has the lowest complication rates but in the cost of having the highest recurrence [26]. SH lies in the middle of the aforementioned procedure with moderate recurrence rate and complication rate [26].

There are two variations for the CH; closed and open techniques [13,20]. The closed CH is usually the preferred one for having a lower risk of infection and a higher success rate (95%) [27]. Moreover, on comparing patients undergoing open CH and those undergoing closed ones; the closed CH group has shown post-operative lower scores of pain, faster healing, and lower complication rates [28,29]. Neverthe-

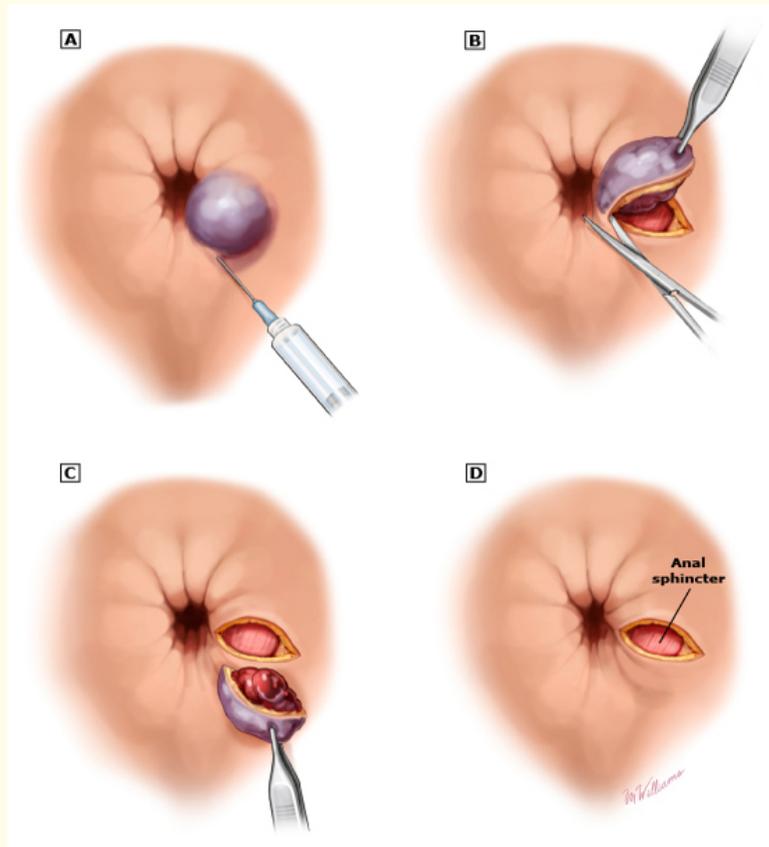


Figure 1: The excision of a thrombosed hemorrhoid and evacuation of the clot. Figure A: Injection of local anesthetic at the base of the thrombosed hemorrhoid. Figure B: Excision of an ellipse of skin with iris scissors. Do not excise deep into the anal sphincter. Figure C: Excised skin ellipse and clot evacuated. Figure D: Hemorrhoid excised, clot evacuated, wound left open to heal. Note underlying anal sphincter [25].

less, in case of a present edema and necrosis (e.g. acute gangrenous hemorrhoids), open hemorrhoidectomy may be preferred over the closed one [30].

Conclusion

Hemorrhoids are a highly prevalent condition that may remain asymptomatic for a long time. Conservative and office-based treatments are the initial management of choice; unless otherwise indicated. The choice of the surgical procedure is mainly prone to the surgeon's decision, preference, expertise and the availability of the different surgical equipment.

Funding

None.

Conflicts of Interest

No conflicts related to this work.

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Volume 16 Issue 1 January 2020

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