P.M. Sagar • B.G. Wolff

The use of the modified Whitehead procedure as an alternative to the closed Ferguson hemorrhoidectomy

Abstract The Whitehead technique of hemorrhoidectomy is not in widespread use. Complications such as stricture and ectropion discourage surgeons. A modification of the original technique with the use of various advancement flaps, however, preserves the anorectal skin and reestablishes the dentate line. The aim of this study was to compare and contrast the results of a modified Whitehead procedure with those of a conventional closed hemorrhoidectomy. A retrospective case-control study was carried out. The case notes of 110 patients who had undergone the modified Whitehead procedure were compared with age- and sex-matched controls. All patients underwent hemorrhoidectomy at the Mayo Clinic between 1984 and 1993. The two groups were well matched. Urinary retention was more common after modified Whitehead compared with closed hemorrhoidectomy. Suture line dehiscence occurred in 3% of the patients who underwent the modified Whitehead procedure. Wet anus or ectropion was not observed. Further hemorrhoidectomy was needed in 3% of the closed patients compared with none in the Whitehead group. In conclusion, a modified Whitehead hemorrhoidectomy can be carried out with low morbidity, comparable to that of the closed procedure, and with good long-term results.

Key words Hemorrhoidectomy • Whitehead • Ferguson

Introduction

Hemorrhoids are normal components of human anatomy. First-degree internal hemorrhoids arise in the submucosal vascular tissue above the dentate line. They increase in size and number and may bleed on defecation. Second-degree internal hemorrhoids protrude on defecation but return spontaneously when straining stops. Third-degree hemorrhoids prolapse with straining and require manual reduction. Fourth-degree hemorrhoids are irreducibly prolapsed. Internal hemorrhoids originate from the superior hemorrhoidal plexus and are covered by mucosa proximal to the dentate line. In contrast, external hemorrhoids arise from the inferior hemorrhoidal plexus and are covered by modified squamous epithelium distal to the dentate line. Acute or chronic symptoms secondary to internal hemorrhoids can be treated with a variety of therapies such as injection sclerotherapy, rubber band ligation, cryotherapy or infrared coagulation. Surgical intervention is indicated for patients in whom conservative therapies have failed, in patients with other benign anorectal conditions which require surgery and in patients with third- or fourth-degree hemorrhoids [1]. The aim of the operation of hemorrhoidectomy is to remove enough hemorrhoidal tissue to reduce or eliminate the patient’s symptoms without any postoperative complication. Unfortunately, this goal is not always realized. A number of approaches have been advocated. The closed hemorrhoidectomy or Ferguson hemorrhoidectomy is popular and can be carried out under general or local anesthesia. In contrast, the Whitehead procedure is not widely practiced. The original description by Walter Whitehead appeared in 1882 [2]. The paper described the excision of the entire pile-bearing area of the anal canal as a tubular segment, the entire edge of the rectal mucosa then being sutured circumferentially to the skin of the anal canal. The operation was criticized even in Whitehead’s day because of appearance of a deformity. The eponymous deformity occurred as a result of suture line dehiscence and a wet anus would be the result. It appeared that the deformity was largely a result of a misunderstanding.
over the exact placement of the approximation of the mucosa of the anoderm. Later surgeons misinterpreted Whitehead’s description and instead of suturing the mucosa to the anal canal at the dentate line they anchored the mucosa to the skin at the level of the anal verge. Hence the development of Whitehead’s deformity. There have been several modifications of Whitehead’s hemorrhoidectomy. Most involve the use of mucosal advancement flaps. We have favored the Buie modification [3]. This modification employs a rectangular or trapezoidal flap incised on one aspect of the anal canal. This is used as an anodermal advancement flap to replace the defect created when a similarly shaped section of cephalad tissue bearing the hemorrhoidal tissue is excised. The aim of this study was to compare the results of this modification of Whitehead’s hemorrhoidectomy with the results of closed hemorrhoidectomy.

**Methods**

The Buie modification of Whitehead’s hemorrhoidectomy was performed on 110 consecutive patients between 1984 and 1994 by one surgeon (BGW). The technique is illustrated in Figs. 1 and 2. Sixty six of the patients were male, median age 52 years (range, 22-86 years). Each was followed for a minimum of 2 months (median, 2 years; range, 0.2-10 years) with clinic consultations and/or telephone conversations. Age-and sex-matched controls also operated on at the Mayo Clinic during the same time period were reviewed. Each patient in this group had undergone a closed (Ferguson) hemorrhoidectomy by one of the other staff colon and rectal surgeons. The details of the patients are shown in Table 1. A number of patients underwent concomitant procedures for associated pathology (Table 2).

Buie modification of Whitehead’s procedure

The operation was carried out under general or spinal anesthesia with the patients in the prone jack-knife position with the buttocks taped apart. An anodermal flap was raised by the incision of a rectangular or trapezoidal flap. This formed the anodermal advancement flap. Cephalad to the flap, a similar section which contained the hemorrhoidal tissue was excised. The anodermal flap was then advanced up the anal canal and sutured to the internal sphincter and mucosa at the level of the dentate line. This could be done either circumferentially (with four flaps) or by leaving skin bridges between flaps according to the extent of the hemorrhoids. Continuous and interrupted dissolvable sutures were used. No relaxing incisions were required.