Limberg Flap Repair for Pilonidal Sinus Disease

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PURPOSE: There are many methods described for the treatment of sacrococcygeal pilonidal sinus disease, and none of them has been accepted as an optimal modality. Plastic procedures have some advantages, such as short duration of hospitalization, quick healing time, low risk of wound infection, and lower recurrence rates. Our choice is Limberg flap repair; we present here our experience with this procedure. METHODS: From August 1998 to July 2000, 147 male patients were treated with Limberg flap repair under regional anesthesia in a soldier's hospital. RESULTS: No major anesthetic complication or wound infection developed. Three patients (2 percent) had a seroma (with negative culture) and six patients (4.1 percent) had partial wound detachment. Patients returned to full activity on the 10th to 25th postoperative day (mean, 18.8). Patients were followed from 1 to 40 (mean; 13.1) months. Seven patients (4.8 percent) had a recurrence. CONCLUSION: The Limberg flap procedure is an easy and effective technique. Patient comfort, quick healing time, early return to full activity, and low complication and recurrence rates are the important advantages of this procedure. [Key words: Pilonidal sinus; Limberg flap; Rhomboid excision]

Pilonidal sinus, an acquired disorder, is usually seen in young adults and is manifested by midline pits in the natal cleft that are associated with hair. The underlying pathophysiological feature is dead hairs being pushed into skin abrasions by movement of the buttocks, which causes a foreign-body reaction within the presacral subcutaneous tissue and development of subsequent acute and chronic abscess.1,2 Several treatments for this disorder have been described. The outcome of therapy is not always satisfactory, however, because of a high risk of failure and complications.3 We have been impressed with the good results of Limberg flap repair reported in the literature, which was first described for the treatment of pilonidal sinus disease by Azab et al.4 In this article, we present our experience of treating 147 patients with the Limberg flap.

PATIENTS AND METHODS

From August 1998 to July 2000, 147 patients (all male; median age, 21 years; range, 20–34) with pilonidal disease were treated by rhomboid excision and Limberg flap in a soldier's hospital. One hundred and twenty-five patients (85 percent) constituted the primary cases. Twenty-two patients (15 percent) had been operated on previously, undergoing excision and primary skin closure. Fifty-eight patients (39.5 percent) had one opening within the midline, 79 (53.7 percent) had more than one opening within the natal cleft, and 10 patients (6.8 percent) had more than one opening and laterally situated fistula formation. Sixty-eight patients (46.3 percent) had chronic discharge, 63 (42.9 percent) had swelling, and 16 (10.9 percent) had pilonidal abscess that had been treated previously by drainage in our hospital or in another center. The length of symptoms ranged from two months to ten years (median, 2 years). Patients with acute inflammation or abscess formation waited until the infection subsided before undergoing surgery.
Surgical Technique

All patients were treated with a depilatory cream two days before surgery and had an enema one night before the operation. All operations were performed under regional anesthesia (spinal or epidural). Anesthesia was given by the same anesthesiologist and operations were performed by two surgeons. Patients were placed in the prone jackknife position. As prophylaxis 1.5 g cefuroxime sodium was administered intravenously in a single dose. The buttocks were laterally retracted by adhesive tapes. The sacrococcygeal area was washed with povidone-iodine solution. A rhombus including the pilonidal sinus was marked (Fig. 1); laterally situated sinus, if present, was removed with another incision. All sinus openings were injected with methylene blue to visualize the sinus itself and all tracts. The rhombus was excised down to the presacral fascia (Fig. 2), and the fasciocutaneous flap was prepared from the right buttock (Fig. 3). The flap was completely mobilized from the gluteus maximus muscle to prevent tension (Fig. 4). Hemostasis

**Figure 1.** The rhombus, including pilonidal sinus and the extent of flap, is marked.

**Figure 2.** The rhombus is excised down to the presacral fascia.

**Figure 3.** A right gluteal fasciocutaneous Limberg flap is prepared.

**Figure 4.** The flap is rotated onto the defect.

**Figure 5.** A suction drain is inserted under the flap, and the skin is closed with interrupted mattress sutures.