

Chapter 27

Pilonidal Disease

Christina W. Lee and Gregory D. Kennedy

Abstract Pilonidal disease is a common acquired condition characterized by occluded hair within small midline pits superior to the intergluteal cleft. Varying presentations are possible which include an acute abscess, simple pilonidal cyst or complicated, recurrent sinus. Pre-operative preparations should include resolution of an acute abscess and appropriate preparation in positioning in addition to antibiotics. Many surgical options exist for the treatment of pilonidal disease including, incision and curettage, marsupialization, excision and primary closure, cleft closure, Z-plasty, V-Y advancement flap, rhomboid flap, and gluteus maximus myocutaneous flap. Time to healing remains variable from 3 to 4 weeks on average. Recurrence rates following surgical therapy may be as high as 40 % with simple drainage of the abscess to as low as 1 % with advancement flap procedures. This chapter presents a myriad of common surgical approaches to the treatment of pilonidal disease, complete with descriptive illustrative figures.

C.W. Lee, MD (✉)

Department of Surgery, University of Wisconsin School of
Medicine and Public Health,
600 Highland Avenue, Madison, WI 53792, USA
e-mail: cleec6@uwhealth.org

G.D. Kennedy, MD, PhD

Department of Surgery, University of Alabama at Birmingham,
Birmingham, AL, USA

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Indications

Pilonidal sinus is associated with small midline pits over the sacrum and coccyx along the intergluteal cleft. These midline pits often contain hair. This condition commonly affects young adults following puberty, and is more common in men than women. Caucasians are principally affected, and is rare among African Americans and Asians [1]. The incidence of pilonidal disease is approximately 0.7 % in young adults and is commonly accepted to be an acquired condition caused by embedded hairs in the intergluteal cleft, which subsequently become suppurative secondary to infection by skin flora [2]. Pilonidal disease may spontaneously resolve with age, however common presentations include, an acute abscess, a simple pilonidal cyst, or a complicated or recurrent sinus. Primary midline openings or pits may be seen in the gluteal cleft approximately 5 cm cephalad to the anus [2]. Acute abscesses present as warm, tender and fluctuant swellings which often exudes purulent discharge through the midline at the apex. Management at this stage is by incision and drainage. Chronic sinus tracts become lined with squamous epithelium, and treatment may be approached by various procedures described below. Recurrence rates vary depending on the study and procedure (Table 27.1).

Perioperative Care

Preoperative Preparation

Acute infection should be resolved prior to definitive operation. Abscesses should be drained and cellulitis treated with antibiotics. Most patients are under the age of 40; therefore, minimal preoperative testing is required. Smoking cessation should be encouraged to assist wound healing.

TABLE 27.1 Comparison of treatment methods for pilonidal disease [1]

Method	IP or OP treatment	Dressing changes required	Weeks to healing (average)	Recurrence (%)
Abscess drainage/ Shaving	OP	Yes	3-4	25-40
Excision	OP	No	3	16
Fistulotomy	OP	Yes	4-6	1-19
Marsupialization	OP	Yes	6	8
Wide local excision only	OP	Yes	8	Up to 38
Wide local excision, primary closure	OP	No	4-8	Up to 38
Excision, advancement flap	IP	No	3-4	6-20
Karydakís advancement flap	IP	No	3	1.3
Cleft closure	OP	No	3	3.3

Positioning and Anesthesia

After general anesthesia is induced, the patient is placed in the prone jack-knife position. Tape to spread the gluteus facilitates full visualization of the cleft. Hair is clipped in the affected area. Patients are administered intravenous antibiotics prior to surgical incision.

Description of Procedures

Many operations have been described for the treatment of pilonidal disease. Few have been studied in a randomized controlled fashion. Therefore, recommendations on operative approach are difficult to make. However, we prefer to start with the simplest operation and advance our interventions to the more complex as necessary. Below we describe the operative approaches employed at our institution.

Incision and Curettage

Sinus tracts are identified with a probe and opened longitudinally using a knife or bovie cautery. The wound base is then curetted, and the skin edges are excised in order to expose the open granulating wound. The wound heals by secondary intention, and must be kept clean and free of hair. The patients are then advised to partake in BID postoperative wound care to allow for adequate healing. Alternatively, a wound vacuum can be employed to assist in wound care and shorten the length of healing.

Marsupialization

If a sinus is infected at the time of excision, primary closure should be avoided. Marsupialization is a technique by which the surrounding skin edges of a defect are sutured down to the presacral fascia [1]. Sinus tracts are identified and typically excised but can be unroofed. The wound base is curetted and all hair is

removed. The defect that remains is often large and requires significant dressing changes. Therefore, the skin edges are sewn to the fibrotic wound base or presacral fascia using interrupted 3-0 vicryl suture (Fig. 27.1). This decreases the size of the wound significantly and anecdotally shortens healing time. Figures 27.2, 27.3, 27.4, 27.5, and 27.6 demonstrate this operative technique in a patient with recurrent pilonidal disease.

Excision and Primary Closure

This operation by definition, requires excision of the entire sinus tract. This includes wide excision of the pilonidal region,

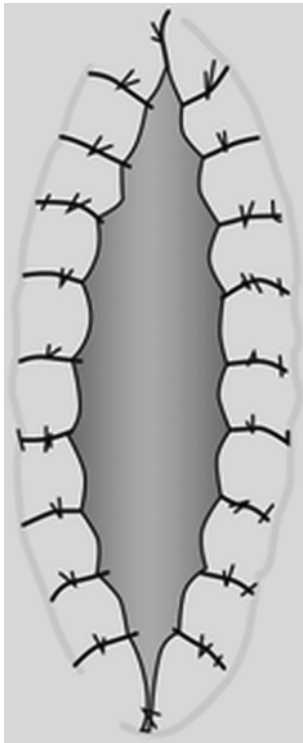


FIGURE 27.1 Marsupialization



FIGURE 27.2 Preoperative positioning in this patient with recurrent pilonidal disease



FIGURE 27.3 Identification of sinus tract with probe



FIGURE 27.4 Debridement to the sacral fascia



FIGURE 27.5 Marsupialization with interrupted suture



FIGURE 27.6 Completed marsupialization

including the skin and entirety of the tract involving the subcutaneous tissues down to the presacral fascia. Excision is completed by a midline incision, and left open or closed primarily. Due to shearing forces around the buttock region, as seen in young and active adults, skin breakdown and delayed healing is common. This is avoided by an off-midline incision as in the Karydakis modified the operation. The sinus is excised elliptically and the wound is closed off of the midline (Fig. 27.7). To accomplish this, a thick flap is created and advanced across the midline.

Cleft Closure

Full thickness skin flaps are raised bilaterally (Fig. 27.8). The wound is debrided. Gluteal fat is apposed with absorbable suture. Excess skin is removed and the wound is closed with 4-0 nylon interrupted suture.

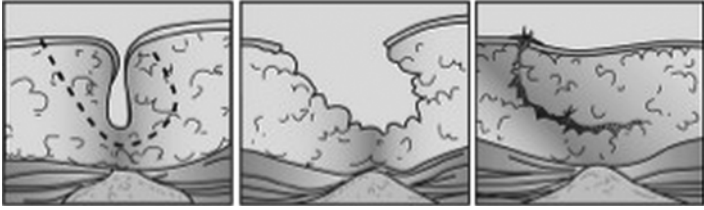


FIGURE 27.7 Primary excision and closure

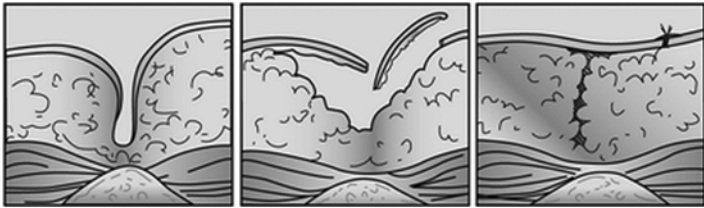


FIGURE 27.8 Cleft closure

Z-Plasty

The sinus tract is excised in the midline which becomes the central limb of the Z (Fig. 27.9). For the classic Z-plasty, wide excision is performed around the pilonidal region, as previously described, so as to include the entire tract, the limbs are incised at 60° angles to the central limb. The length gain of a Z-plasty varies based on the angle incised (Table 27.2). All limbs are of equal length. Subcutaneous skin flaps are created under ‘a’ and ‘b’ so as to allow mobilization without tension, then transposed as shown. The resulting central limb will be perpendicular to the original central limb. The skin is closed with 4-0 nylon interrupted suture.

V-Y Advancement Flap

These flaps can be unilateral or bilateral (Fig. 27.10). A unilateral flap is capable of covering 8–10 cm defects while a

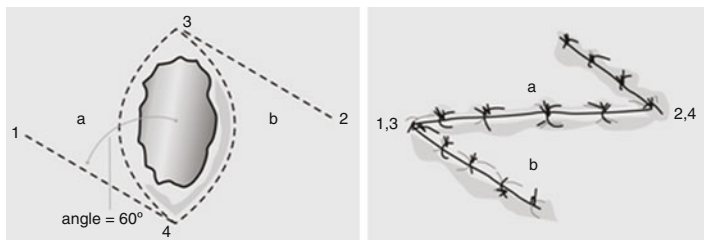


FIGURE 27.9 Z-plasty

TABLE 27.2 Length gain after Z-plasty

Angles of Z-plasty (degrees)	Theoretical gain in length (%)
30–30	25
45–45	50
60–60	75
75–75	100
90–90	120

bilateral flaps are needed to cover >10 cm defects [3]. The sinus tracts are excised in the midline and the base of the V points laterally. The triangular flap is made 1.5–2× as long as the defect in the direction of the advancement. However, some authors have reported flaps up to 3x as long as the defect, and should be personalized to the dimensions so as to avoid making acute angles at corners [3]. The base of the triangle is made equal to the perpendicular diameter of the defect. The skin flap is undermined at the medial edge while fascia is undermined as little as necessary at the lateral edge (Fig. 27.11). Skin hooks are used to pull the leading edge of the flap to the far edge of the defect. The lateral aspect of the harvest site is re-approximated making the stem of a Y. The inferior and superior edges of the Y are closed with 3-0 vicryl deep dermal interrupted sutures and 4-0 nylon interrupted sutures for skin.

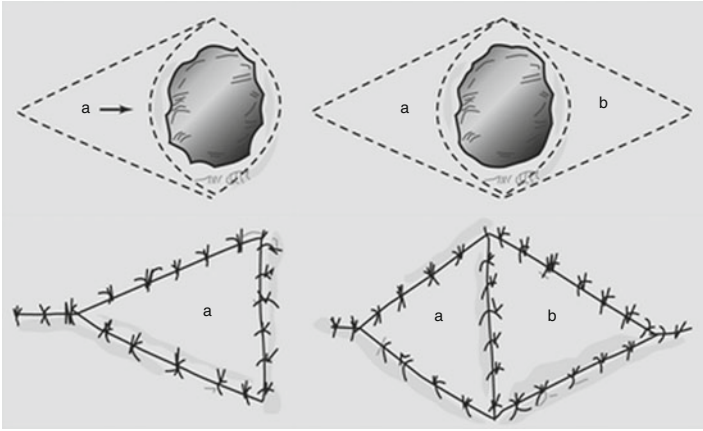


FIGURE 27.10 V-Y advancement flap



FIGURE 27.11 V-Y advancement flap cross sectional view

Rhomboid Flap

The sinus tract is excised from the midline, enclosed within the shape of a rhomboid. This flap depends on the looseness of the adjacent tissue. The rhomboid has two opposite 60° angles and two opposite 120° angles. Each side of the rhomboid is equal to the short axis 2–4. This axis is extended by its own length to point 5. The 3–4 line and 6–5 line are parallel. A flap is created down to the muscular fascia and rotated as shown (Fig. 27.12). The flap is secured with 4-0 nylon interrupted suture. Four flaps are available for any rhomboid defect (Fig. 27.13).

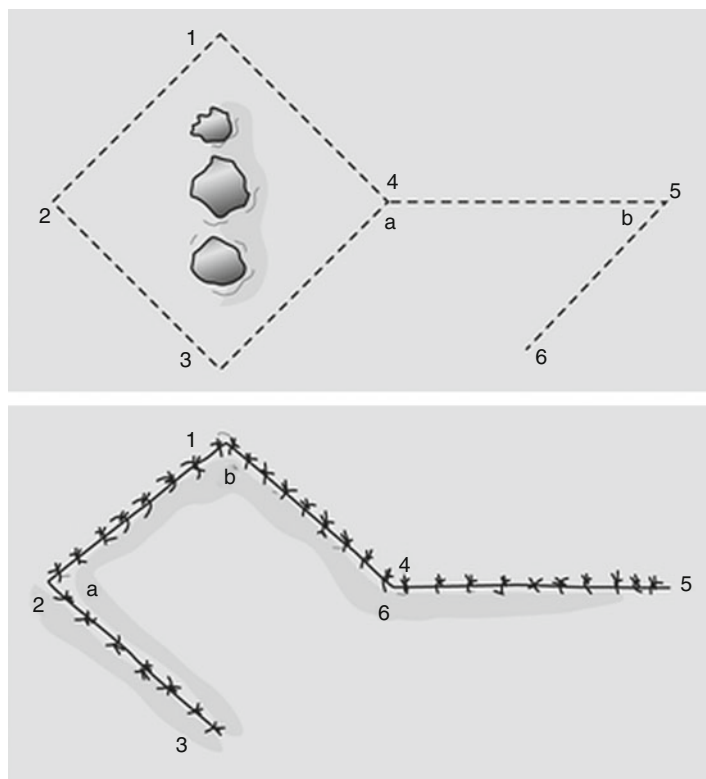


FIGURE 27.12 Rhomboid flap

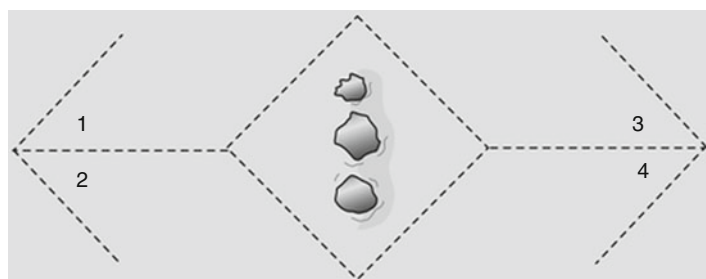


FIGURE 27.13 Rhomboid flaps available for a defect

Gluteus Maximus Myocutaneous Flap

This rotational flap is capable of covering large defects. To avoid functional deficits, only one half of the muscle is used. For pilonidal disease, the superior aspect of the gluteus muscle is typically used to create a flap. A sterile Doppler is utilized to locate the perforators to be included in the flap, and may be used continuously throughout the dissection. The superior gluteal muscle vessels exit above the piriformis muscle and just lateral to the sacrum. The sciatic nerve exits below the piriformis muscle, as do the inferior gluteal vessels and should be avoided. The defect is excised down to presacral fascia removing all prior scar tissue. A circular flap is created and the upper portion of the gluteus maximus is transected down to the gluteus medius and piriformis muscles. The base of the flap should be four to five times the length of the defect. After flap rotation, a suction drain is placed. The wound is closed in layers and skin edges are secured with 4-0 nylon interrupted suture (Fig. 27.14). The patient should not lie flat for several days, although variation amongst surgeons may permit patients to lie on the operated area at time intervals that are no longer than one hour at a time. A short course of oral antibiotics, such as a first generation cephalosporin, is usually recommended.

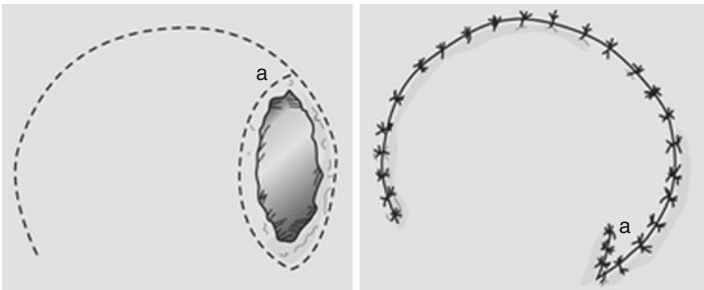


FIGURE 27.14 Gluteus maximus myocutaneous flap

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