

Practical Management of Pilonidal Disease

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Summary: Pilonidal disease is a common problem across the globe, with a wide variety of options for management, ranging from healing by secondary intention to flap closure. As new techniques have been introduced, the ideal method to reduce complications and limit recurrence has become unclear. In this review, we highlight the most common methods used to treat pilonidal disease, as well as the senior author's preferred technique for management. Ideally, surgeons are able to choose the optimal procedure for each patient and maximize outcomes with minimal patient care burden and morbidity. (*Plast Reconstr Surg Glob Open* 2020;8:e3270; doi: [10.1097/GOX.0000000000003270](https://doi.org/10.1097/GOX.0000000000003270); Published online 22 December 2020.)

INTRODUCTION

Pilonidal disease is a frequently encountered problem, especially among young men. It is a challenging condition to treat due to frequent recurrences. Although often managed by general surgeons, there has been an increasing role for plastic surgeons in recent years with the advent of newer techniques and treatments. It is important that plastic surgeons be aware of the different treatment modalities and reconstructive options for pilonidal disease, to optimize outcomes and minimize recurrence.

The estimated overall incidence of pilonidal disease is 26:100,000.¹ Global variations in incidence have been reported, ranging from 0.1% (in Germany) to as high as 6.6% (in Turkey).^{2,3} It is most commonly encountered in young men in their 20s and 30s, although women can also be affected.¹ The underlying cause of pilonidal disease is controversial, and was initially thought to be congenital.⁴ The disease is now believed to be multifactorial, and related to the depth of the natal cleft, degree of hirsutism, hygiene of the affected area, family history, and obesity.⁴⁻⁶ Both sedentary and athletic lifestyles have been associated with pilonidal disease.^{1,4}

Bascom described the inciting etiology as an empty hair follicle that becomes filled with keratin and debris, eventually resulting in loose hair entrapment within the follicle.⁷ The body's natural foreign body reaction ensues, resulting in a granuloma within the follicle, ultimately forming a sinus tract.^{7,8} Difficulty with appropriate hygiene in the area, coupled with an anaerobic environment, may lead to

superinfection of the tract, culminating in acute pilonidal disease. Over time, the sinus tract drains, but is not eliminated, resulting in a chronic condition with repeated acute incidents.

Plastic surgeons may encounter patients with pilonidal disease at any time point in their disease process and should be prepared to assist with management at all levels, ranging from non-surgical to definitive management. The following sections describe practical management techniques for each aspect of pilonidal disease care, along with evidence-based recommendations and practical surgical pearls from experience.

Non-surgical Management

The aim of non-surgical management of pilonidal disease is the destruction of problematic hair follicles, thereby removing the nidus for abscess formation. Shaving is the simplest recommendation for non-operative management, with some studies recommending continued shaving around the sinus until healed.^{9,10} Although multiple studies have demonstrated its efficacy, the exact frequency and extent of shaving required has not been elucidated, and recurrence could occur if shaving is stopped.⁴ Laser hair reduction has been intermittently examined for more low-maintenance, long-term risk reduction. Some small studies have shown good results with laser hair removal, although large studies are lacking.¹¹⁻¹⁴ It is important to note that since laser hair reduction targets hair in the anagen growth phase, multiple treatments spaced weeks apart are needed for effective reduction, which may have implications on cost and patient compliance.¹² In their systematic review, Halleran et al highlighted the heterogeneity of studies on the topic, but the studies included ranged from

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1–11 treatments, with the majority receiving 3–4 treatments every 1–2 months.¹² General natal cleft hygiene is a critical component of all prevention strategies to reduce debris and bacterial load and prevent nidus formation.¹⁴

Surgical Intervention

Acute Surgical Intervention

Patients are often diagnosed with pilonidal disease during their first acute infection of the sinus. In the acute setting, simple incision and drainage (I&D) of the abscess is the optimal management.¹⁵ Some patients may heal after an initial I&D, although no definitive management has occurred to address the root source of the abscess, and many go on to develop chronic disease. Off-midline access to the abscess is believed to be optimal to drain the cavity while minimizing tension and pressure on the incision post-operatively.^{6,15} Excision of the midline pits themselves has not been shown to decrease recurrence rate or improve healing compared with I&D alone.¹⁶

Definitive Treatment

The simplest technique for definitive management of pilonidal disease is direct excision and healing by secondary intention. This has been compared with primary excision and primary closure in several randomized clinical trials, as well as a Cochrane review, with the majority of studies demonstrating shorter operative times with secondary

intention, with similar recurrence rates between the two modalities.^{6,17–19} On the other hand, healing by secondary intention places a significant care burden for the patients and their caregivers with frequent dressing changes and long healing times, and has become less popular in the modern management of pilonidal disease.

Although the Cochrane review was unable to show a difference in outcomes between primary closure and healing by secondary intention, there was a demonstrable benefit to off-midline closure compared with midline closure of incisions.⁶ Several reconstructive methods have been proposed to achieve off-midline closure, 1 of which is the rhomboid flap (or the Limberg flap).^{20–22} The rhomboid flap has the benefit of easy off-midline closure, while being a well-established and familiar flap. Multiple studies have shown that pilonidal reconstruction with a rhomboid flap has a low recurrence rate (<3%), with an average hospitalization of approximately 3 days, and return to activity in 2 weeks.^{21,22} A closed-suction drain is generally placed under the flap, and complications are rare, and primarily include seroma, hematoma, and distal necrosis.^{20–22}

Another local flap option with off-midline closure is the “cleft lift” operation, which was first described by Bascom in 2002. This procedure has the additional advantage of reducing the depth of the natal cleft.⁷ Since its initial description, it has become a very popular choice for pilonidal reconstruction because of its technical



Fig. 1. Example of cleft lift procedure initial markings of safety lines both at rest (A) and after taped to the surgical bed (B).

simplicity, low recurrence risks, and ability to be performed as an outpatient rather than requiring a hospital stay with the rhomboid flap.^{23–26} Guner et al prospectively compared pilonidal reconstruction with a rhomboid flap to the Bascom cleft lift procedure, and found the cleft lift procedure to be superior, particularly with regard to operative time and patient quality of life post-operatively, providing Level 1 evidence of the efficacy of the cleft lift.²⁷ Several other studies have shown the cleft lift procedure to be a highly effective method to treat pilonidal disease with minimal complications (such as dehiscence or infection), low recurrence rates, and high patient satisfaction as well.^{23,24,26,27} Bascom and Bascom retrospectively reviewed their experience with 69 patients who had refractory pilonidal disease, and had a 95.6% cure rate after the first procedure.²³ Additionally, Ortega et al retrospectively reviewed their experience with the cleft lift procedure on 74 patients, and only had 3 recurrences, which occurred 12–51 months after the operation.²⁶ It is also important to note that, although Bascom and Bascom originally described the cleft lift procedure for refractory/recurrent pilonidal disease, the more recent studies from Ortega et al and Guner et al have shown its simplicity and efficacy as the index operation for definitive management.^{26,27}

Our Technique

Our preference for management of chronic pilonidal disease is the Bascom cleft lift procedure, with minor modifications to the technique as originally described (**See Video [online]**, which displays the cleft lift procedure favored by the senior authors for management of pilonidal disease).²³ In our experience, the cleft lift procedure is simple to perform, without requiring complex surgical instruments, and has a proven low rate of recurrence with minimal burden of after-care for the patient. We begin by marking the lines at which the buttocks touch with the patient standing; these are known as the “safety lines” to avoid distortion of the gluteal architecture post-operatively or visible scar. After induction of general anesthesia, we position the patient prone, with moderate flexion at the waist to facilitate exposure. The bilateral buttocks are firmly taped and anchored to the operative table laterally (**Fig. 1**). The standard cleft lift markings are made along the left margin of the area of pilonidal disease. These markings include an advancement flap superiorly, and a rotation flap inferiorly. The rotation flap has the shape of a quarter circle and is centered on the anus (**Fig. 2**). We start by elevating the advancement flap in the subcutaneous plane until the safety line on the left side is reached. We then elevate the rotation flap off the underlying sphincter musculature (**Fig. 3**). It should be noted that this rotation flap is naturally thinner than the more cranial advancement flap, and the surgeon must carefully identify the correct plane between the subcutaneous tissue and the sphincter musculature to avoid injury to the muscle.

The buttock tapes are then released, and the amount of excision is verified by approximating the buttocks, which is critical to avoid over-resection. The skin of the pilonidal cyst is excised, leaving the deep tissue intact. Any sinus or abscess is completely unroofed. The tissues at the base of the sinuses are debrided with surgical sponges



Fig. 2. Example of complete cleft lift markings.

or an electrocautery scratch pad to remove any granulation tissue. The tissues are also incised (or cross-hatched) using electrocautery, to release any scar contractures. The wound is then irrigated with saline, and a closed-suction drain is placed (**Fig. 4**). The wound is closed in several layers. After final closure, we cover our incision with 2-octyl cyanoacrylate to help maintain an impermeable barrier between the incision and surrounding environment as long as possible. A simple padded dressing is applied over the incision, along with surgical mesh underwear.

We have performed over 2 dozen cases using this technique, and all of our cases have been performed on an outpatient basis, with minimal post-operative narcotic requirements. In our experience, the majority of patients are no longer taking pain medication by their first post-operative visit, and only 8.3% require a refill of any narcotic pain medication. Patients are allowed to lie supine and sit on the closure immediately post-operatively, although strenuous activity is restricted for approximately 6 weeks to



Fig. 3. Cleft lift after elevation of the lateral flap and excision of excess skin before closure.



Fig. 4. Cleft lift after excision and closure. Note the off-midline placement of the incision and decreased depth of the gluteal cleft.

allow complete healing. Choice of antibiotic prophylactically is left to surgeon discretion and regional/country-specific recommendations, although we frequently prescribe a 5-day course of ciprofloxacin and metronidazole in patients without contraindications given the risk for contamination in the area, as others have previously described.²⁴ We have had a low complication rate with our cohort; only 1 patient had a superficial dehiscence, which was managed with local wound care, and 1 patient had a recurrence requiring reoperation 1.5 years after the index operation. In our experience, minor wound dehiscence requiring local wound care is the most common complication, with more severe complications such as infection, hematoma, or pilonidal recurrence being exceedingly rare.

CONCLUSIONS

Pilonidal disease can be a challenging condition to manage, with frequent recurrences and unsatisfactory

outcomes. As our understanding of the pathophysiology of pilonidal disease has evolved, our surgical techniques have as well. The Bascom cleft lift procedure appears to be the most efficacious surgery to reduce recurrence and directly address the cause of the disease, while remaining low in surgical complexity and is an easily accessible technique to surgeons across the globe.²⁷ In our own experience, we have had good success with this procedure as well. Plastic surgeons can be critical in successful management of pilonidal disease and should remain informed of treatment options and management.

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