Treatment of Chronic Pilonidal Disease

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PURPOSE: Pilonidal disease (PD) is a common chronic intermittent disorder of the sacrococcygeal region. Despite surgical therapy dating back more than one century, management remains controversial and recent reports have advocated different surgical approaches. METHODS: A retrospective review was conducted of 129 patients who were treated for chronic PD in our institution during a five-year period, 1990 to 1994. RESULTS: Excision with primary closure was performed in 56 patients; 47 underwent open excision without closure, and 26 had marsupialization procedure. All were performed electively, with only minor complications. Complete healing was fastest in the primary closure group, despite a 14 percent postoperative wound infection rate. Recurrence rates of 11, 13, and 4 percent were found for primary closure, wide resection, and marsupialization procedures, respectively. There was no correlation among recurrence rate, postoperative infection, or prior surgery. CONCLUSION: Considering healing time, morbidity, and recurrence rate, we conclude that surgical treatment should be directed at either excision and primary closure or marsupialization. Wide excision with secondary healing should be performed only for grossly infected and complex cysts. [Key words: Pilonidal disease; Marsupialization; Primary closure; Open excision]

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Congenital theories of pilonidal disease (PD) origin were popular in the fifties. It was believed that secondary infection of a congenital remnant of epithelium was the cause.[1, 2] However, it is now widely accepted to be an acquired process. Congenital sinuses to the neural canal and dura do exist, but they are rare. They usually present in childhood and are in the lumbar rather than sacral region.[3] PD generally afflicts young adults after puberty. Incidence has been found to be 1.1 percent of male students and 0.11 percent of female students.[4, 5] Incidence is highest in Caucasians and less among Africans and Asians, probably a result of hair characteristics and growth.[6, 7] Incidence is greater in patients with increased sweat activity associated with buttock friction, local hirsutism, and reduced personal hygiene.[8, 9] Management of this common affliction is controversial, with multiple operative approaches described in the literature. In this retrospective study, we reviewed the management of 129 patients with chronic PD, comparing three different treatment modalities and results.

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METHODS

Between January 1990 and December 1994, one hundred forty-one patients underwent surgery electively for chronic PD. Three different operative treatments were used: excision of the cyst and primary closure, wide excision with healing by secondary intention (the "lay open procedure"), and marsupialization. Not included in this study were patients who underwent drainage of a pilonidal abscess without definitive surgery. We also excluded 12 patients who were not available for follow-up. For the remaining 129 patients, the following data were obtained: age, sex, duration of symptoms, past history of a drainage procedure or definite operation, type of present operative procedure, anesthesia, and hospital stay. Information concerning wound healing, follow-up, and recurrence was obtained from clinic/office records and by contacting patients and their primary physicians.

RESULTS

Records of 129 patients who were available for follow-up were reviewed. There were 67 males and 62 females, with an average age of 29 (range, 13–63) years. A history of chronic disease was found in the majority of patients; 60 patients experienced years of intermittent infection, and 61 reported months of intermittent infection. Only eight patients had only a few weeks of symptoms. General anesthesia was used in 22 patients, spinal or epidural anesthesia in 42 patients, and local anesthesia with intravenous sedation in 59 patients (for 6 patients, these data were not available). Thirteen patients underwent surgery for recurrence after previous definitive surgery. One hundred twenty-one procedures were performed on an ambulatory basis, and eight patients were hospitalized for an average of three days. Table 1 presents results, follow-up, and recurrence rate.

Excision and primary closure was performed in 56 patients. Of these, 5 had a recurrence after prior definitive surgery, and 20 patients had undergone

Table 1.
Results, Follow-Up, and Recurrence Rate

Procedure	No. of Patients	Past Surgery (%)	Past I/D (%)	Average F/U (yr)	Postoperative Recurrence (%)	Comments
Primary closure	56	5 (9)	20 (36)	3.3	6 (11)	8 postoperative wound infections; 1 failure
Secondary intention	47	7 (15)	9 (19)	2.6	6 (13)	2 postoperative bleeding
Marsupialization	26	1 (4)	15 (58)	3.3	1 (4)	—

I/D = incision and drainage; F/U = follow-up.
No statistical significance.

drainage of a pilonidal abscess previously. Median time for complete wound healing postsurgery was two weeks (range, 4 days-8 weeks). Eight patients (14 percent) developed wound infection. For them, median time for wound closure was six weeks (range, 4 weeks-6 months). One patient experienced continued postoperative drainage from the operative site, most probably a result of incomplete cyst excision. During the follow-up period (average, 3.3 years), 6 of 56 patients (11 percent) had a recurrence, although none of them had a postoperative wound infection.

Forty-seven patients underwent a lay open procedure. For seven patients, it was a second operation. Nine patients had an acute inflammatory process or an abscess that required incision and drainage before the definitive procedure. Two patients had postoperative bleeding, which required suture ligation of a bleeding vessel for one patient and a pressure packing for the other one. Median time for wound healing was 8 weeks (range, 3 weeks-9 months). Average follow-up was 2.6 years, and six patients (13 percent) had a recurrence.

There was no significant morbidity for the 26 patients who underwent marsupialization. Average follow-up was 3.3 years, median healing time was five weeks (1 week-8 months), and one patient (4 percent) had a recurrence.

DISCUSSION

In 1847, Anderson[10] first described the treatment of this disease. In 1880, Hodges[11] introduced the term "pilonidal" (hair nest) and proposed the congenital theory for its origin. Since then, the pathogenesis of PD has been actively debated, and only recently the acquired theory has gained general acceptance. In 1983, Bascom[12] staged the clinical pathogenesis of PD and suggested that the cyst evolves from rupture of infected hair follicles. The distended follicle becomes secondarily infected. Edema results in obstruction of the follicle with rupture of the infectious cyst contents into the subcutaneous fat creating tracks, sinuses, and abscesses

Surgical treatment derived from the prevalent pathogenesis theory. When the congenital theory was accepted, recommended treatment was excision of the cyst(s) and surrounding tissue to the postsacral fascia in an attempt to eliminate all congenital islands of epithelium. However, since the theory of acquired disease has evolved, dissection has been limited to the pilonidal cyst/sinus itself and immediate surrounding inflammatory tissue and does not routinely include deeper layers. Although evolving new techniques are reported, in general, the current approaches are still one of these three different operative procedures.

In wide excision with closure by secondary intention (lay open), an elliptical incision is made at the margins of the pilonidal cyst and sinus pits. The incision is not carried beyond the ill-defined tissue, because there is no need to dissect to the sacrococcygeal fasia and ligaments. The wound is left open and lightly packed for healing by secondary intention. The rational is avoidance of primary closure of a contaminated wound. However, a long period of time is required for healing along with the necessity for prolonged local care. The main reported complication is postoperative bleeding in a small percentage of patients. Published recurrence rates are divergent and range between 1 and 43 percent.[7] In the 47 patients who underwent this procedure at our institution, a recurrence rate of 13 percent and postoperative bleeding in two patients were noted.

Excision with primary closure involves an elliptical excision of the sinuses, pits, and inflammatory tissue followed by an approximation of the subcutaneous tissues and skin. Closure is not always tension-free and, despite debridement, these are still contaminated wounds. To obviate this problem, use of advance-

Table 2.
Important Factors to be Considered in Evaluating Different Procedures

Procedure	Postoperative Complications	Healing Time	Wound Care	Recurrence Rate
Primary closure	+++	+	+	++
Secondary intention	++	+++	+++	++
Marsupialization	+	++	++	+

ment flaps to cover the wound defect has been reported.[13, 14] Initial results are promising; however, the procedure should be subjected to further clinical trials. In our study, patients with primary closure experienced a 14 percent wound infection rate and 11 percent recurrence rate. These rates are comparable with those reported in the literature (rate range varies between 0 and 37 percent)[7] and are presumably the consequence of both tension and primary closure of contaminated tissues. Nevertheless, there was no correlation between postoperative infection, prior surgery, or drainage and later recurrence. In fact, none of the eight patients who experienced postoperative infection had a recurrence. Primary closure avoids much of the morbidity associated with the open procedure. Recurrence rates are not substantially different and, in our experience and others,[15] are even lower than rates after open procedures.

In a marsupialization procedure, a probe is inserted into the cavity of the communicating sinus tracts followed by excision of the tissue over the probe. Excision is confined to the anterior and lateral cyst wall and tracts, leaving the posterior wall intact. The cavity is scrubbed free of hair, inflammatory, and granulation tissue, and the subcutaneous aspect of the skin is then sutured to the curetted base of the tract, which is then loosely packed open with an antibacterial solution. This procedure was performed in 26 patients. There were no postoperative complications, and an average follow-up of 3.3 years revealed only one patient with recurrence. Similarly, good results (recurrent rate of 6 percent) were found by Solla and Rothenberger.[16]

There is no agreement in the literature about the procedure of choice for PD, and conflicting reports have favored the lay open,[17, 18] primary closure,[15, 19] or marsupialization procedures.[16] The open procedure places a significant burden on patients and health care personnel in terms of prolonged healing time and wound care. The marsupialazation technique avoids closure of a contaminated wound and combines the benefit of shorter healing time with a low recurrence rate but still may necessitate considerable postoperative management. In our experience, patient satisfaction has been highest in the treatment group who underwent a primary closure procedure (obviously excluding the seven patients with recurrence and failure). Table 2 describes important factors that should be considered in evaluating different procedures.

CONCLUSIONS

Despite numerous studies that have been conducted so far, there has not been universal agreement about the perfect procedure for PD, probably because there is none. However, the authors prefer to perform excision and primary closure for relatively small, uncomplicated, not grossly infected cysts. The majority of cysts are best treated by marsupialization, whereas open procedures should be reserved for complicated or grossly infected cases. In any event, the patient should be aware of the potential complication, recurrence rate, postoperative care, and expected healing time of the different alternatives.

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