A Retrospective Study of 40 Cases of Pilonidal Sinus with Excision of Tract and Z-plasty as Treatment of Choice for Both Primary and Recurrent Cases

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Abstract Pilonidal sinus is a common chronic disease of the sacrococcygeal region. The treatment varies according to the clinical presentation of the disease. Although many surgical methods have been suggested, an ideal method is still lacking because of high recurrence rates. The aim of this work is to assess the role of Z-plasty in promoting primary healing in pilonidal disease and to evaluate morbidity and recurrence. This study included 40 patients (36 males and 4 females) who underwent excision of sinus and Z-plasty closure for sacrococcygeal pilonidal sinus. The follow-up period ranged from 6 to 12 months. There were 36 males and 4 females with a median age of 25 years. The mean hospital stay was 2 days. The mean time to return to work after discharge from the hospital was 14 days. There were no recurrences, and all patients were satisfied with the cosmesis. Two patients (5 %) had numbness over the flap. Necrosis of flaps did not occur in any patient. Only three patients were noticed to have wound infection (7.5 %). Five patients (12.5 %) developed wound seroma. Although requiring some technical expertise, excision

of sinus and Z-plasty offer superior results with respect to recurrence in the hospital stay and cosmesis of patients with pilonidal sinus.

Keywords Pilonidal sinus · Sacrococcygeal region · Z-plasty · Seroma

Introduction

Pilonidal sinus disease is a common problem, but its management is frequently unsatisfactory [1]. According to Monro and McDermott [2, 3], the factors responsible for the development of pilonidal sinus would appear to be the deep natal cleft together with, in most patients, the presence of numerous hair surrounding it, with their points noticeably directed towards its depth. Multiple case reports described pilonidal cyst formation in jeep drivers in World War II. So many servicemen were affected with pilonidal disease that it was renamed “jeep disease.” These findings led to the belief that pilonidal cysts can be acquired by excessive repetitive trauma to the sacrococcygeal region [4]. Though pilonidal sinus disease has been surgically treated for more than 100 years, its management remains controversial, and many reports [5, 6] have advocated various different approaches. Because no method satisfies all requirements for the ideal treatment, in this study, the results of the Z-plasty procedure were evaluated for the elimination of the disease.

Material and Methods

This was a 3-year study at our institution from June 2008 to September 2011. The population comprised 40 patients with pilonidal sinus disease (36 men and 4 women, median age 25 years (range 14–36 years)). Patients were admitted a day

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before the surgery, and laboratory tests were obtained. They took a bath the night before the surgery, and the operative field was shaved carefully. On the morning of the operation, patients were transferred to the operating room and given spinal anesthesia. The anesthetized patient was placed in prone position on two rolls (one under the chest and another under the pelvis). The head of the patient was placed on a roll with 45° lateral angulation. The operative field was draped and prepared with Betadine (Fig. 1).

The tracts were excised with a narrow elliptic segment of skin. The incision was next deepened to remove the whole of the natal raphe and to reach the aponeurosis over the erector spinae at the back of the sacrum. If there was any residual deep area of granulation tissue, after removing the sinus tract, it was excised. The length of the primary wound was 2–6 cm. The limbs of the Z were cut to form a 60° angle with the long axis of the wound. The length of each limb was equal to the length of the primary wound. The flaps were then transposed without tension (Fig. 2). The transposed flaps were next approximated and sutured with 2/0 vicryl for subcutaneous and 3/0 nylon for skin closure. A simple form of suction drainage through a stab wound was used. The wound was then covered with dressing gauze. Postoperatively, patients were given opioid analgesia for 24 h. The dressing was changed 24 h after operation, and patients were discharged with diclofenac tablets (one every 12 h) for pain relief. First visit was performed 48 h after operation. In this visit, the suction drain was removed if all drainage had ceased. The patients were advised to keep the area clean. On the second visit (2 weeks after operation), flap

Fig. 1 Image showing preoperative view of pilonidal sinus with hair clearly seen pointed towards and entering the sinus

Fig. 2 Image showing flaps transposed at the time of surgery after excision of tract. Note the tension free apposition achieved

sutures were removed. The patients were followed up for 6–12 months.

Results

There were 36 males and 4 females with a median age of 25 years (range 14–36 years). The mean hospital stay was 2 days (range 1–5 days). The mean time to return to work after discharge from the hospital was 14 days (range 10–24 days). Postoperative morbidity involved superficial wound infection in three patients (7.5 %), which was managed by removal of skin sutures, regular saline dressing, and healing by secondary intention. This resulted in scab formation with resolution of the infectious process. Two patients (5 %) had numbness over the flap. Five patients (12.5 %) developed wound seroma. Necrosis of flaps did not occur in any patient. There were no recurrences, and all patients were satisfied with the cosmesis (Fig. 3).

Fig. 3 Image of a healed Z-plasty showing excellent cosmesis and complete obliteration of tract

Discussion

Pilonidal disease is a painful condition usually occurring in the intergluteal region. It is a problem filled with controversial issues, including who actually first described the disease, its etiology, and its optimal treatment [7]. The condition was probably first described by Mayo in 1833 [8]. Hodges in 1880 first used the term “pilonidal”, from the Latin pilus, which means hair, and nidus, which means nest [9]. Z-plasty increases the transverse length by recruiting the lateral tissue and thus obliterates the natal cleft which is the main cause of pilonidal sinus formation [7]. Z-plasty has three major uses. It increases the length of the skin in a desired direction, changes the direction of a scar so it lies in the same direction as the skin lines, and rotates the axis of the tissue included in the Z-plasty flaps [10]. Mansoor and Dickson [10] used this technique on 120 patients. Complications included three abscesses and two hematomas. There were only two recurrences (1.6 %) at a follow-up of 1 to 9 years. Following surgery, discharge was on the first postoperative day, and patients returned to work 2 weeks later. Toubanakis [11] used this procedure on 110 patients. He found no recurrences at follow-up of 1 to 10 years. Bose et al. [12] found 20 % necrosis and 10 % wound infection, and one patient was with hematoma after Z-plasty. Hodgson et al. [13] compared Z-plasty with incision and drainage or excision with marsupialization for pilonidal sinuses. They showed that traditional surgical approaches have resulted in high recurrence rates. They found that no further surgical treatment was required in the Z-plasty group. Behdad et al. [14] reported that the incidence of seroma, infection, and relapse after Z-plasty was 12, 3.3, and 3.6 %, respectively.

Compared to previous case series, ours showed an improved result in terms of recurrence, cosmesis, and overall duration of stay. Z-plasty is thus an effective treatment for pilonidal sinus disease offering quicker recovery and better esthetic result.

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