

## Z-PLASTY FOR TREATMENT OF THE RESIDUAL CAVITY AFTER PILONIDAL SINUS EXCISION

A. BEHDAD, M.D., AND M. HOSSEINPOOR, M.D.

*From the Department of Surgery, Al-Zahra Hospital,  
Isfahan University of Medical Sciences,  
Isfahan, I.R. Iran.*

### ABSTRACT

In order to evaluate the outcome and complications of Z plasty in pilonidal cyst repair, 90 patients with pilonidal cysts of the natal cleft were selected and repaired by Z-plasty in Al-Zahra hospital. The patients were followed for 6 months and complications such as seroma, infection and relapse were evaluated. The incidence of seroma, infection and relapse after Z-plasty was 12%, 3.3% and 3.6%, respectively. These results show that Z-plasty is an effective form of operation for pilonidal cyst treatment.

*MJIRI, Vol. 14, No. 4, 317-319, 2000.*

**Keywords:** Z-plasty, pilonidal cyst.

### INTRODUCTION

Pilonidal sinus disease is a common problem, but its management is frequently unsatisfactory.<sup>1,2</sup> According to Monro and McDermott,<sup>3</sup> 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 hairs surrounding it, with their points noticeably directed towards its depth. Because no method satisfies all requirements for the ideal treatment, in this study the results of the Z-plasty procedure was evaluated for elimination of disease.

### MATERIAL AND METHODS

The study population comprised 90 patients with pilonidal sinus disease (64 men and 26 women, aged  $26.82 \pm 6.52$  years). Patients were admitted the day of surgery and requested laboratory examinations were performed. They took a bath the night before and shaved the operative field carefully. On the morning of operation, patients were transferred to the operating room and given general 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. If preoperative shaving of the perianal region was inadequate, the nurses shaved the field. The operative field was draped and prepared with betadine.

**Table I.** Results of treatment of pilonidal sinus in the literature.

Author	Method	Recurrence %
Lundhus <sup>9</sup>	primary closure	30%
Rossi <sup>10</sup>	primary closure	3.26%
Jimenez-Romero <sup>11</sup>	excision and rhomboid flap	0%
Al-Hassan <sup>12</sup>	secondary granulation	12%

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 on the back of the sacrum (Fig. 1). 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 to 6 centimeters. The limbs of the Z were cut to form a 45 degree angle with the long axis of the wound. The length of each limb was equal with the length of the primary wound. The flaps were then transposed without tension. Hemostasis was usually obtained with electrocautery, but for bleeding points on the flaps, we used chromic catgut ligatures. The transposed flaps were next approximated and sutured with 3/0 nylon by end-on mattress sutures. A simple form of suction drainage through a stab wound was used. The wound was then covered with dress-

## Z-Plasty for Closure After Pilonidal Sinus Excision

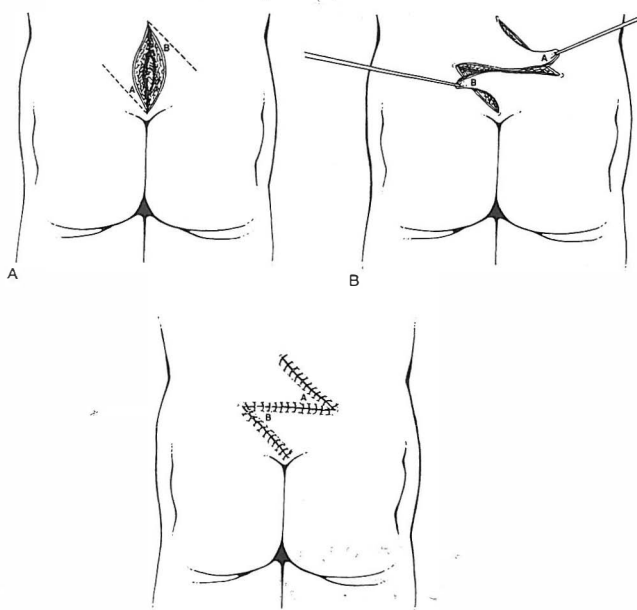


Fig. 1. Technique of Z-plasty.

ing gauze. Postoperatively, patients were given morphine (4 mg q6h) for 24 hours. The dressing was changed 24 hours after operation and patients were discharged with diclofenac tablets (one q12h) for pain relief. First visit was performed 48 hours after operation. In this visit, the Hemovac was removed if all drainage had ceased. In the case of continuous drainage, patients were visited per 48h until the drainage had ceased. The dressing was removed 48 hours after Hemovac removal.

The patients were advised to keep the area clean. In the second visit (two weeks after operation) flap sutures were removed. The patients were followed for six months.

Data were given as means $\pm$ SD for quantitative variables and percentile for qualitative variables.  $\chi^2$  and Fisher's exact test were used for comparing data. A  $p$  value $<$ 0.05 was significant.

### RESULTS

90 patients with pilonidal sinus disease were included in the study (64 men and 26 women). The mean age of patients was 26.82 $\pm$ 6.52 years. Necrosis of flaps didn't occur in any patient. Only three patients were noticed to have wound infection (3.3 percent). 11 patients (12 percent) developed wound seroma. Recurrence of pilonidal disease was seen in three patients (3.6 percent). There was no significant differences between men and women for wound seroma ( $p=0.2$ ), and recurrence ( $p=0.5$ ).

### DISCUSSION

When several methods are used for treating a disease, it

usually indicates that none of them are entirely satisfactory.<sup>4</sup> The earliest reported cases of pilonidal sinus appear to have been treated by simple lancing, but in 1900 Goodsall and Miles described treatment by incision of sinus tracts and open packing with healing by granulation. Rains et al.<sup>5</sup> described excision and primary suture in 1959. Excision and marsupialization has been advocated by Abramson and Z-plasty was used by Monro and McDermott<sup>3</sup> in 1965.

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.<sup>7</sup> Hodgson et al.<sup>6</sup> 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. In our study, the recurrence rate of disease was 3.4 percent.

In Mansoori et al.'s study,<sup>7</sup> the recurrence rate of Z-plasty was one among the 107 primary instances. They also found three wound abscesses and two hematomas. Bose et al.<sup>8</sup> found 20 percent necrosis, 10 percent wound infection and one patient with hematoma after Z-plasty. Results of treatment of pilonidal sinus reported in the literature are illustrated in Table I. Our results showed that the treatment of sacrococcygeal pilonidal sinus by Z-plasty appears to be better than other methods.

### REFERENCES

1. Mueller X, Rothenbuchler JM: Sacrococcygeal cysts. *J Chir Paris* 128 (11): 487-90, 1991.
2. Fuzun M, Bakir H: Which technique for treatment of pilonidal sinus—open or closed? *Dis Colon Rectum* 37 (11): 1148-50, 1994.
3. Monro R, McDermott F: The elimination of causal factors in pilonidal sinus treatment by Z-plasty. *Br J Surg* 52: 177-181, 1965.
4. Allen TG: Pilonidal sinus: finding the right treatment. *Br J Surg* 77 (2): 123-32, 1990.
5. Rains AJH: Treatment of pilonidal sinus by excision and primary closure. *Br Med J* 2: 171, 1959.
6. Hodgson WY, Greenstein RJ: A comparative study between Z-plasty and incision and drainage or excision with marsupialization for pilonidal sinuses. *Surg Gynecol Obstet* 153 (6): 842-4, 1981.
7. Mansoori A, Dickson D: Z-plasty for treatment of disease of the pilonidal sinus. *Surg Gyn Obstet* 155: 409-11, 1982.
8. Bose B, Candy J: Radical cure of pilonidal sinus by Z-plasty. *Am J Surg* 120: 783-6, 1970.
9. Lundhus E, Gottrup F: Outcome at three to five years of primary closure of perianal and pilonidal abscess. *Eur J Surg* 159 (10): 555-8, 1993.

A. Behdad and M. Hosseinpoor

10. Rossi P, Russo F, Gentileschi P: The pilonidal sinus. *G Chir* 14920: 120-3, 1993.
11. Jimenez-Romero C, Alcalde M: Treatment of pilonidal sinus by excision and rhomboid flap. *Int J Colorectal Dis* 5 (4): 200-2, 1990.
12. Al-Hassan HK, Francis IM: Primary closure or secondary granulation after excision of pilonidal sinus? *Acta Chir Scand* 156 (10): 695-9, 1990.