Management of Recurrent Pilonidal Sinus by Simple V-Y Fasciocutaneous Flap

Vijay P. Khatri, M.D.,* Manuel H. Espinosa, M.D.,* Atul K. Amin, M.D.†

*From the *Department of General Surgery and †Division of Plastic and Reconstructive Surgery, Easton Hospital, Easton, Pennsylvania*

PURPOSE: Several methods of managing the sacrococcygeal pilonidal sinus have been described, and fervent arguments for each form of therapy can be found in the literature. Recurrence unfortunately plagues all forms of therapy, though it is evident that the lowest rates have been reported for procedures involving local flap reconstruction. We conducted this case review to evaluate the validity of a simple reconstructive procedure for recurrent pilonidal disease. METHODS: We describe the application of the V-Y fasciocutaneous advancement flap to reconstruct the defect following radical excision of recurrent pilonidal sinus in five consecutive patients. RESULTS: Tension-free closure offers the benefits of a reduction in postoperative pain, less restriction in activity, and a shorter hospital stay. CONCLUSIONS: Preliminary results offer evidence of the efficacy of the simple reconstructive procedure in the management of difficult cases. [Key words: Pilonidal sinus; Multiple recurrence; Reoperation; Surgical flaps]

Khatri VP, Espinosa MH, Amin AK. Management of recurrent pilonidal sinus by simple V-Y fasciocutaneous flap. Dis Colon Rectum 1994;37:1232-1235.

Review of the literature reveals an abundance of treatment modalities that suggests that a uniform therapy does not exist.[1] Simple measures can be used in the initial management of pilonidal disease in the office setting or on an outpatient basis. Alternatively, radical excision with primary closure using local flaps has become an attractive mode of primary therapy. The majority of our patients have been treated by the previously described simple measures because we believe that routine flap reconstruction is an overkill of the disease. However, so far we have encountered five difficult cases, where the sinuses failed to heal despite numerous conservative treatments. Instead of using complex rotational or transposition flaps, a simple V-Y advancement flap was used to reconstruct the defect following radical excision. This approach provided excellent initial healing, and so far these patients have remained recurrence-free. Patient accrual has been slow, because we only apply this technique in difficult recurrent cases of pilonidal sinus. However, we believe that it would be valuable to report these preliminary results, as they support the efficacy of the technique.

Read at The Pennsylvania Colon and Rectal Meeting, Philadelphia, Pennsylvania, May 15, 1992 and at the meeting of The Clinical Congress of the American College of Surgeons, San Francisco, California, October 10–15, 1993.

Address reprint request to Dr. Amin: Division of Plastic Surgery, Easton Hospital, 250 South 21st Street, Easton, Pennsylvania 18042.

TECHNIQUE

On admission it must be determined that the patient has no active infection or purulent discharge from the sinus. Under general anesthesia the patient is then placed in the prone position. The extent and direction of the sinus is determined with the use of a lacrimal probe. The area to be excised is mapped on the skin in an elliptic fashion. The excision is then carried down to the postsacral fascia and laterally to the normal-appearing fat and gluteal fascia. Upon determining that all tracts are completely excised, the wound is temporarily packed, gloves and instruments are changed, and the patient is redraped.

Two equilateral triangles are then drawn on either side of the defect as shown in Figure 1. The fasciocutaneous flap is then raised in a standard fashion (Fig. 2). The skin is incised down to the dermis with a scalpel. To avoid blood loss, further dissection is performed with a point diathermy until the gluteal fascia is identified. We ensure that the sides of the flap have a slight outward tilt to provide a broader base. The mobility of the flap is then assessed. Usually it is necessary to incise the gluteal fascia and part of the underlying gluteus maximus at the apex of the triangle to obtain mobility. The base of the triangle may need to be undermined to allow better approximation in the midline.

At first, the technique is completed on one side because it is often the case that only one V-Y flap is adequate to close the defect. A Jackson-Pratt drain is placed beneath the flap. The flap is initially aligned with staples, and the subcutaneous layer is closed

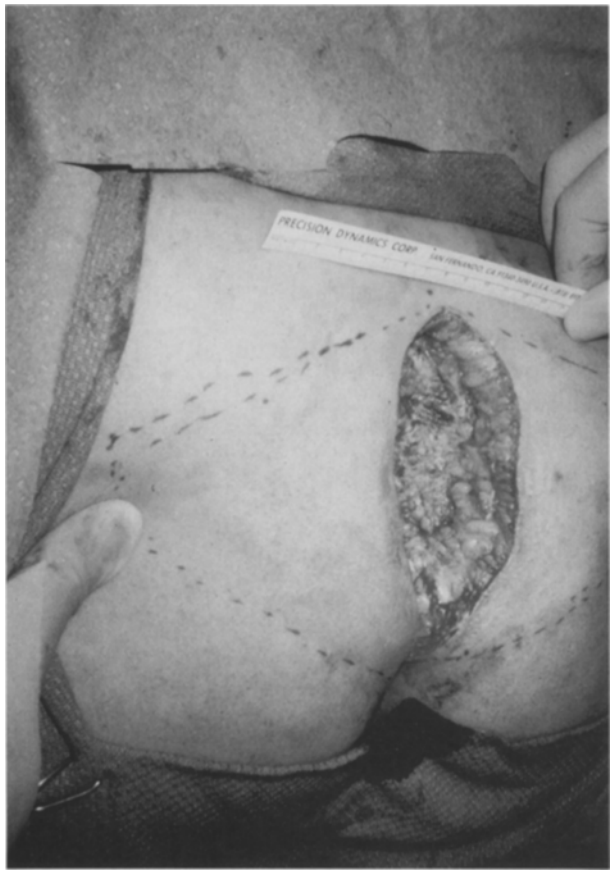

Figure 1. Defect following radical excision of pilonidal sinus. Site of V-Y flap is marked with an indelible pen.

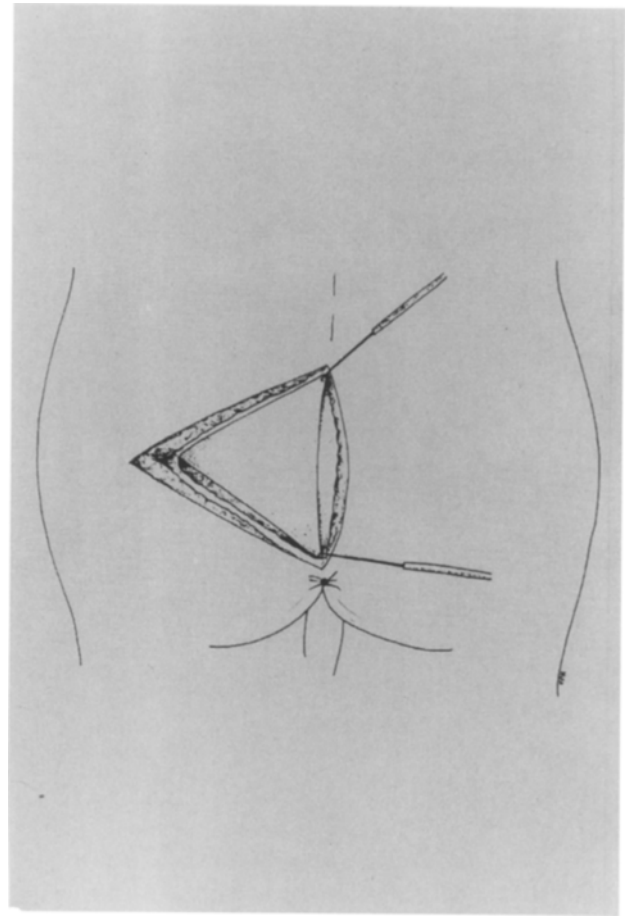

Figure 2. Standard method of raising the V-Y fasciocutaneous flap.

with 000 absorbable sutures. Skin is approximated with 0000 monofilament sutures. Antibiotic ointment is applied to the wound, which is then dressed with a nonadherent material. After patients are nursed on their side for 24 hours, the patient is allowed to ambulate. The patient is usually discharged on the fifth postoperative day (Fig. 3). Skin sutures are removed on the tenth postoperative day, and the patient is closely followed in the office. The patient is allowed to resume employment on, approximately, the 15th postoperative day. Figures 4A and B show healing one month after the procedure.

RESULTS

The V-Y reconstruction has been applied to five cases of difficult recurrent pilonidal disease. Details of these cases are provided in Table 1. Each patient had at least three recurrences that had been previously treated by a variety of other conservative methods. One of the patients (Patient 1) had an extensive area of sacrococcygeal pilonidal sinus, measuring 6 cm × 8 cm. The condition had adversely affected their daily

Figure 3. Appearance of the wound on postoperative day five.

work routine. The average duration of the procedure was 170 minutes or longer if the V-Y flap was performed bilaterally. All flaps remained viable. In particular, the flap tips healed with no necrosis. None of the patients developed local hematomas, infection, or

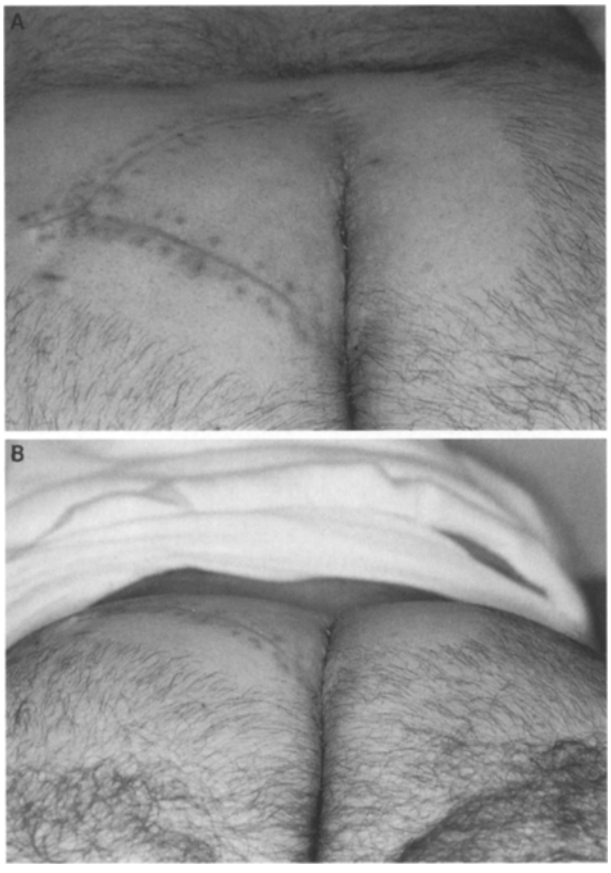

Figure 4. A and B, different views that show flattening of the natal cleft.

breakdown of the suture line. There has been no incidence of numbness of the flap area. Patients had a relatively pain-free postoperative recovery and remained in the hospital for no more than five days, except for Patient 1 whose hospital stay was prolonged because of cardiac arrhythmias. As we gained experience with our technique, patients have been allowed to ambulate early. All five patients have remained recurrence-free, and all have resumed their normal work routine.

DISCUSSION

Several flaps have been described to obtain coverage of the defect following radical excision and thus eliminate recurrence. These include Z-plasty, W-plasty, rhomboid and gluteus maximus rotational flap.[2–5] The V-Y fasciocutaneous flap has been widely applied to cover skin defects elsewhere but, to the best of our knowledge, it has never before been reported in the management of pilonidal sinus. This flap has the distinct advantage of involving minimal dissection as opposed to the extensive mobilization required to construct the gluteus maximus rotational and rhomboid flap. This reduces the incidence of postoperative hematoma formation and thus minimizes morbidity. The V-Y flap flattens the internatal cleft, which eliminates the negative suction effect and consequently the catch basin effect for shed hairs. Reconstruction allows the tissues to be approximated without tension and thus reduces the chance of wound disruption. The tension-free closure offers the added benefits of a reduction in postoperative pain, less restriction in activity, and a shorter hospital stay. Conversely, with the use of conservative methods, Notaras[6] and Goodall[7] noted prolonged hospitalization, wound healing time, and period of unemployment.

Some would argue that creation of a midline scar would result in a higher rate of recurrence by acting as a portal of entry for reinsertion of hairs. However, Obeid[8] did not report any failures, despite producing a midline scar, and conversely Kitchen[9] and Karydakis[10] had recurrences even with a laterally placed wound. As far as the question of hirsutism is concerned, little can be done to change the nature of body hair. Though shaving the operative area is essential until the wound is healed, Karydakis[10] indicated that in the long term the offending hairs probably arise from the scalp or the nape rather than the

TABLE 1.
Details of Patients who Underwent the V-Y Flap Procedure

Patient No.	Age/ Sex	No. of Recurrences	Duration of Procedure (min)	V-Y Flap Type	Blood Loss (ml)	Day of Ambulation	No. of Analgesia Doses	LOS (days)	Follow-up (yr)
1	78/M	3	165	Bilateral	500	6	8	21	4.5
2	29/M	4	195	Unilateral	200	3	10	5	3.5
3	29/M	3	140	Unilateral	200	1	2	4	2
4	49 /F	4	215	Bilateral	200	1	7	4	1
5	33/M	4	170	Unilateral	100	1	5	3	0.5

M = male; F = female; LOS: Length of stay.

sacrococcygeal area. So far, these theoretic disadvantages have not been borne out by our experience.

The mutiplicity of treatment options available for pilonidal sinus reflects the general controversy that exists concerning its management. We still advocate primary excision with closure by secondary/primary intention as a first-line treatment for pilonidal sinus. However, for select cases of recalcitrant pilonidal sinus, the results of flaps are still superior. Whether the V-Y flap is unilateral or bilateral will depend on the size of the pilonidal sinus and the subsequent defect following radical excision. Several studies have documented that over 80 percent of the recurrences appear within two years. In comparison with these data, we feel optimistic as to the success of the application of the simple V-Y fasciocutaneous flap because we have not had any recurrences. This technique would be a valuable addition to the armamentarium of the surgeon dealing with this common disabling disease.

REFERENCES

1. Eftahia M, Abcarian H. The dilemma of pilonidal disease: surgical treatment. Dis Colon Rectum 1977; 20:279–86.
2. Bose B, Candy T. Radical cure of pilonidal sinus by Z-plasty. Am J Surg 1970;120:783–6.
3. Roth RF, Moorman WL. Treatment of pilonidal sinus and cyst by conservative excision and W-plasty closure. Plast Reconstr Surg 1977;60:412–15.
4. Azab ASG, Kamal MS, Saad RA, Abou al Atta KA, Ali NA. Radical cure of pilonidal sinus by a transposition rhomboid flap. Br J Surg 1984;71:154–5.
5. Perez-Curri JA, Temple WJ, Ketcham AS. Gluteus maximus myocutaneous flap for the treatment of recalcitrant pilonidal disease. Dis Colon Rectum 1984; 27:262–4.
6. Notaras MJ. A review of three popular methods of treatment of postnatal (pilonidal) sinus disease. Br J Surg 1970;57:886–90.
7. Goodall P. The aetiology and treatment of pilonidal sinus. Br J Surg 1961;49:212–18.
8. Obeid SA. A new technique for treatment of pilonidal sinus. Dis Colon Rectum 1988;31:879–85.
9. Kitchen PR. Pilonidal sinus: excision and primary closure with a laterilised wound-The Karydakis operation. Aust N Z J Surg 1982;52:302–5.
10. Karydakis GE. New approach to the problem of pilonidal sinus. Lancet 1973;2:1414–15.