

# Which Technique for Treatment of Pilonidal Sinus—Open or Closed?

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**PURPOSE:** After excision of the pilonidal sinus, some surgeons leave the wound open, and others close the wound primarily. The aim of this study is to compare length of hospital stay, length of time to return to work, wound infection rate, and recurrence rate in chronic pilonidal sinus patients, after modification of both closed and open techniques. **METHODS:** One hundred ten patients who had chronic-stage pilonidal sinus were randomly assigned to receive one of two excisional surgical procedures. One-half were treated by surgical excision and primary closure (closed technique, Group A). The other one-half were treated with Obeid's surgical excision (open technique, Group B). **RESULTS:** Ninety-one (46 in Group A and 45 in Group B) of 110 patients were followed for a period four months to three years. Although patients with primary closure had significantly longer hospital stays ( $P < 0.05$ ) than patients in the open group, they returned to work significantly earlier ( $P < 0.05$ ). In Group A and Group B, infection rates were 3.6 percent and 1.8 percent ( $P > 0.01$ ), and recurrence rates were 4.4 percent and 0 percent ( $P > 0.01$ ), respectively. **CONCLUSION:** Because both techniques have very low complication rates, treatment of chronic pilonidal sinus should be based on patient preference and characteristics, especially employment status. [Key word: Pilonidal sinus]

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Many theories relating to pathogenesis of pilonidal sinus have been proposed.<sup>1-5</sup> Theories expounding an acquired basis are widely accepted.<sup>4,5</sup> Many surgical techniques have been used in the management of pilonidal sinus. Among these procedures, complete excision of the whole pilonidal sinus is widely practiced. After excision of the pilonidal sinus, some leave the wound open, and others close the wound primarily.<sup>6-9</sup>

The technique of excision and open packing causes prolonged morbidity and a broad scar. Excision with primary closure sacrifices the internatal cleft with a resulting high incidence of sepsis under the skin and a high recurrence rate.<sup>6-9</sup> After modification of both

techniques, we aimed to compare length of hospital stay, length of time to return to work, wound infection rate, and recurrence rate in chronic pilonidal sinus patients.

## MATERIALS AND METHODS

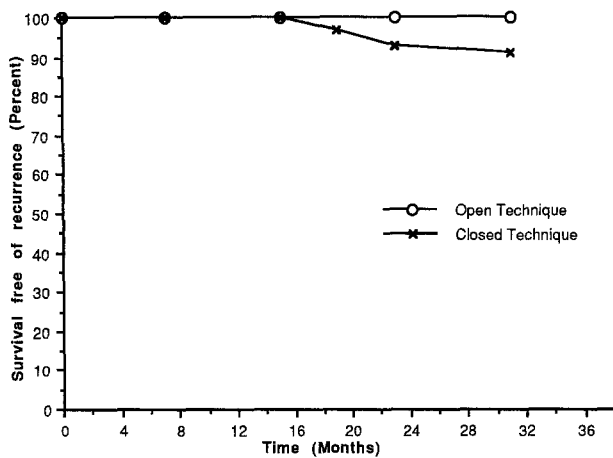
One hundred ten patients who had chronic-stage pilonidal sinus were randomly assigned to receive one of two excisional surgical procedures. One-half were treated by surgical excision and primary closure with approximated sutures (closed technique, Group A). The other one-half were treated with excision and semi-open packing first described by Obeid<sup>10</sup> in 1988 (open technique, Group B). The groups did not differ significantly concerning age, sex, or type of anesthesia given. Routine preoperative laboratory tests were within normal range in all patients. No antibiotics were given prophylactically.

When using spinal (25), general (35), or local (60) anesthesia, the patients were placed in either the prone or left-side position. The sacral area was shaved and disinfected with ten percent povidone-iodine. Postoperatively, analgesics were given as needed, and dressings were changed once daily with 10 percent povidone-iodine. After hospital discharge, patients continued daily dressing changes. In Group A, the approximated stitches were removed on postoperative day 5, and skin sutures were removed on postoperative day 12. Ninety-one (46 in Group B) of 110 patients were followed for a period of four months to three years (mean, 23 months). Outcome measures were length of hospital stay, time until return to work, infection rate, and recurrence rate. Wilcoxon's rank-sum test (for hospital stay and return to work) and chi-squared test (for infection and recurrence rates) were used to determine statistical significance. Life table analysis is shown in Figure 1.

In Group A patients, after complete excision of the pilonidal sinus by elliptic incision, three sutures were placed passing through both the skin (2 cm from the wound edges) and fascia overlying the sacrum. Skin sutures were tied, and then three approximated su-

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**Figure 1.** Life table analysis for a survival free of recurrence.

tures were tied over a roll-shaped gauze to force the skin down toward the fascia overlying the sacrum. A drain placed in the cavity was connected to a negative pressure system. Presence of this drain mandated that we keep patients in the hospital for several days.

In Group B patients, an elliptic incision was made. Skin edges were beveled sharply outward, and subcutaneous fat tissue was undercut at 45 degrees down to the fascia overlying the gluteus muscle at some distance lateral to the sacrum. By grasping the edges of the cyst and retracting it medially and the skin edge laterally, sharp dissection downward to the sacral fascia and the gluteus muscle fascia was performed. The specimen was then removed by sharp dissection. Up to this point, this is identical to the procedure described by Obeid.<sup>10</sup> Individual, absorbable sutures [chromic catgut or Vicryl® (Ethicon, Inc., Somerville, NJ)] were used to sew the skin edges to the sacral fascia, leaving a very narrow open area, 2 mm in width. Obeid<sup>10</sup> used nonabsorbable sutures for this step and gave medication to his patients to induce constipation. Our patients were not given constipation-inducing medications. Because this open procedure involved no drain or closed spaces, these patients were generally quickly discharged home.

## RESULTS

In Group A, wound infection developed in two patients (3.6 percent). These patients were treated by removing the stitches and allowing secondary healing to occur. Mean length of hospital stay was 4.7 (range, 3–11) days, and mean time until return to work was 10.7 (range, 9–21) days. During the follow-up period,

which averaged 23 months, recurrence was seen in 2 of 46 patients (4.4 percent).

In Group B, wound infection occurred in one patient (1.8 percent). This patient was treated by converting the procedure to the conventional open technique. Mean length of hospital stay was 2.4 (range, 1–4) days, and mean time until return to work was 17.6 (range, 12–21) days. No recurrences were seen in 45 patients who were followed. The need for dressing and follow-up did not prevent patients from working.

According to the chi-squared test, rates of infection and recurrence were not statistically significantly different between the two groups ( $P > 0.01$ ). According to Wilcoxon's rank-sum test, hospital stay was significantly shorter in Group B ( $P < 0.05$ ), and return to work was significantly longer in Group B ( $P < 0.05$ ). Life table analysis for a survival free of recurrence is shown in Figure 1.

## DISCUSSION

The ideal operation for treating pilonidal sinus should be simple, not require a prolonged hospital stay, have a low recurrence rate, cause minimal pain, and retain the internatal cleft.<sup>10</sup> Although excision and open packing has a low recurrence rate, it requires multiple, painful dressing changes, and the resultant scar is liable to break down because of trauma.<sup>1</sup> Excision with primary closure provides quicker healing. Although some surgeons report good results after primary closure,<sup>11–13</sup> others have found a wound dehiscence rate of nearly 50 percent because of infection<sup>1, 14</sup> and a recurrence rate of 20 percent.<sup>15, 16</sup>

We prefer to call our technique in Group B the "semiopen technique." This technique was first mentioned by Obeid.<sup>10</sup> Our semi-open technique is similar to Obeid's technique principally, but there are some differences. We used absorbable suture material and do not recommend constipation-inducing medications. This technique minimizes the morbidity of open packing and gives good results. Our closed technique using approximator sutures in Group A patients does not allow a potential space to be created under the skin, thus resulting in a low wound infection and dehiscence rate. Although we found no difference in infection and recurrence rates between the two groups, the semiopen technique has the advantage of shorter hospital stays for the patient. Although Group A patients were hospitalized longer because of the drain placed in their wounds, they returned to work earlier because of quicker wound healing.

### CONCLUSION

Excision with open packing and excision with primary closure are both radical methods for treating pilonidal sinus. In the present study, both methods have been modified and resulted in good patient outcomes. In this population, no significant differences between the groups were found in infection rate and recurrence rate. Patients who underwent our semiopen technique had shorter hospital stays but longer times until return to work. We currently choose our surgical technique in this type of patient based on patient preference and characteristics, especially employment status.

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