Management of pilonidal sinus

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ABSTRACT

Objective: Pilonidal sinus is a disabling nuisance in young adults, yet its management remains controversial.

Methods: Patients admitted to Prince Abdulrahman Sudery Hospital, Al Jouf, Kingdom of Saudi Arabia, over a period of 10-years from January 1990 to December 1999 were evaluated in this retrospective study. We compared 2 most commonly performed surgical operations in 272 patients consisting of group A, 176 patients, managed by excision and primary closure and group B, 96 patients, managed by excision and healing by the second intention.

Results: More than 90% of group A achieved primary healing within 10 days. Although 100% of group B achieved eventual healing, it took a significantly longer period, mean 48 days ($p<0.0001$). Failure of primary healing occurred in 16 (9.1%) group A patients but 6 (3.4%) of these were amenable to secondary closure and still achieved healing in a shorter period of time than group B ($p<0.05$). There was no significant difference in the recurrence in the 2 groups.

Conclusion: We conclude that although hospital stay and consumption of inpatient hospital resources was greater for group A, excision and primary closure is a superior option for most patients and especially for patients who are largely young and active.

Keywords: Pilonidal sinus, primary closure.

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Pilonidal sinus disease is one of the most common problems requiring surgical management in our patient population. Among the many operative techniques described for the management of pilonidal sinus are: coring out of the mid-line affected follicles followed by repeated brush removal of hair and granulation tissue from the remaining tracts, curettage of the affected follicles followed by destruction of the debris and the epithelial component of the tract by 50% phenol injection, laying open with healing by secondary intention, excision plus packing with healing by second intention, excision with primary closure, and Z-plasty plus rhomboid flaps.[1-5] Although there is no consensus as to the best method of management of this problem, the 2 most commonly performed surgical operations are excision with primary closure and laying open/excision with healing by second intention. Excision without primary closure leaves the natal cleft with an open wound for a long period of time.[4–8] This is unacceptable to our youthful patients (mean age 24.7 years). Only a clearly demonstrable superiority of excision without closure would justify its inconvenience. We have come to believe that excision plus primary closure is the best option for our patients. We tested our belief in this study to see if our results justify this belief.

Methods. We reviewed the records of all patients who underwent surgical management of pilonidal sinus at the Prince Abdulrahman Sudery Hospital, Sakaka, Al Jouf, Kingdom of Saudi Arabia over a period of 10-years from January 1990 to December 1999. Patients who had incision, drainage and curettage for pilonidal abscess were excluded.

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Also, we excluded patients who presented with recurrent disease as these are routinely managed by excision with healing by second intention in our hospital. Between January 1990 and December 1993, 68 patients, out of 92, had pilonidal sinus excision without closure while 24 patients had primary closure. Based on our experience, during the 1990 to 1993 period and spurred by patient dissatisfaction with long standing natal cleft wounds, a deliberate policy of primary closure evolved. Accordingly from January 1994 until December 1999, 152 of 180 patients had excision with primary closure and 28 patients had excision without primary closure. There were a total of 272 patients comprising 176 patients (group A) who underwent excision plus primary closure and 96 (group B) who underwent excision without closure. Patients who underwent excision of pilonidal sinus without closure from January 1994 were patients who presented with markedly infected complex pilonidal disease usually associated with multiple sinuses extending beyond the natal cleft. We compared the course of these 2 groups of patients.

Management. Cardinal principles in our stated current preference of excision with primary closure are: (1) All patients will receive preoperative antibiotics (cephradine one gram intravenously) usually within 30 minutes of the operations. (2) Complete excision of all sinuses and all their branches. (3) Absolute hemostasis before starting the closure. (4) Total absence of dead space after closure. (5) Institution of a suction drain if conditions 3 and 4 cannot be met. (6) Postoperative antibiotics (cephradine one gram intravenously 6 hourly, and metronidazole 500mg intravenously 8 hourly) for 7 days. (7) The natal cleft kept free of hair preoperatively, during the immediate postoperative period, and for 8 weeks after complete healing. (8) Sutures removed from a wound treated with primary closure if it becomes infected. (9) Infected wound treated with daily dressing and secondary suture inserted as soon as the wound is ready (usually within 7 days). (10) If secondary suture is not suitable, the wound is allowed to close by second intention. Recorded for all patients were fever, pneumonia, seroma, wound infection, insertion of secondary suture, post operative days until discharge, total number of days until complete healing of wound, and recurrence. Wound infection was defined as per criteria of the Center for Disease Control.[9] All patients were seen for follow-up in the surgical outpatient clinic. Those treated by excision and healing by second intention were seen daily for wound dressing initially for 2 weeks then every other day until complete wound healing. Thereafter, together with patients treated by primary closure, all patients were followed up fortnightly for one month and thereafter at irregular intervals for one to 3 years with a minimum follow-up of one year. Statistical analysis was by Student t-test, and Chi squared test as appropriate. The $p<0.05$ was considered significant.

Results. Data from a total of 272 patients who underwent surgical management for pilonidal sinus was used in this study. Group A, 176 patients, had excision with primary closure while group B, 96 patients underwent excision and healing by second intention. The patients' age ranged from 17 to 42 with a mean of 24.7 years. There were only 17 (6.3%) females for a male to female ratio of 1:15. Of group A patients, 160 (90.9%) achieved primary closure within a mean period of 10 days. This is in contrast to group B who took 48 days to heal by second intention ($p<0.0001$). Of the 16 (9.1%) group A patients, in whom there was a failure of primary healing due to wound infection, only 6 (3.4%) were suitable for secondary closure with total healing within a significantly shorter period (mean 32 days) compared to group B patients ($p<0.05$). Group B however had the advantage of shorter hospital stay, 5 days, versus 10 days for group A ($p<0.05$). Recurrence occurred in 16 (9.1%) group A and (7.3%) group B patients and these fall within reported limits. There was no significant difference in the recurrence rate or other postoperative complications in both groups.

Discussion. This study compared the management and course of 2 groups of patients, excision plus primary closure in 176 patients (group A) and excision plus healing by second intention in 96 patients (group B). The overwhelming number of male patients in our patient population contrasts with reports from Western countries where male to female ratios vary between 1.5:1 and 4:1.[10,11] The poor representation of females in our pilonidal sinus study population has been noted elsewhere in the Kingdom[6] and is consistent with the usual findings in our patient population of reluctance among our females to seek medical attention for tolerable personal medical problems due to bashfulness. It may also represent the relative rarity of pilonidal sinus in our female patient population. The higher incidence of pilonidal sinus in young adult males as in our study, and the marked decrease in occurrence of the disease above age 40 years as seen among our patients have also been noted elsewhere.[11-13] The achievement of primary healing in over 90% of all our patients treated with primary closure in a mean period of 10 days and 32 days following secondary suture is significant in comparison with 48 days for patients treated by excision without closure. Reported figures for time to healing for excision/laying open and healing by second intention varies from 42 to 90 days.[6-8,11] Controversy regarding the management of pilonidal sinus generally revolves around failure of primary healing, the occurrence of wound infection

requiring removal of stitches, prolonged hospital stay, consumption of hospital resources and recurrence. Our primary closure patients remained in the hospital significantly longer than patients treated by excision alone ($p<0.05$). Accordingly, primary closure seems to consume more in patient hospital resources. However, excision without closure consumes more hospital out patient resources, leads to greater disability and persistence in disruption of the patient's quality of life for a further 8-10 weeks due to an open wound in the natal cleft. In one study, up to 86% primary healing was achieved following excision as a day case.[4] Thus prolonged hospitalization and increased consumption of hospital resources are not necessarily characteristic of primary closure. The absence of any difference in recurrence rates between the 2 methods of management noted in this study has been documented elsewhere.[4,11] Failed primary healing due to wound infection in 16 (9.1%) of our patients is high but falls within reported limits of 6.4 -16%.[8,12,14] But only 10 (5.7%) of the 16 patients who had wound infection eventually needed healing by second intention. Thus 166 (94.3%) of 176 patients in whom primary closure was attempted were freed of their odious pilonidal disease in far less time than it took to achieve even complete granulation of the wound healing by second intention. The aim of surgical management of pilonidal sinus is to rid the patient of an annoying, disabling and infected sinus. Primary suture achieves this aim in a short period of time. Deliberately allowing the wound to heal by second intention exposes more than 90% of the patients who would have benefited from primary closure to unnecessarily prolonged natal cleft wound in order to avoid failure of primary healing due to wound infection in less than 10% of the cases. Even if one considers the worst case scenario in which, for example, failure of primary closure and recurrence occurs in 25% of the cases following primary closure, 75% of such patients would still achieve primary healing and be spared the problem of a 2 month long natal cleft wound. In our study, failure of primary healing occurred in obese patients with deep natal cleft following excision of pilonidal sinus. This patient feature militates against adequate natal cleft flattening, a contributory condition to excellent healing in pilonidal sinus.[11,15] Nevertheless, more than one third of such patients healed well by secondary closure and in a shorter time than patients managed ab initio with healing by second intention. A confounding factor in our study is the fact that even though our study population consisted of consecutively managed patients in our institution, it is nevertheless a retrospective study. It is accepted that evidence based medicine dictates that a firm conclusion regarding the superiority of one form of management over another requires a prospective double blind controlled study involving randomly selected patients. But our study was inspired by patient dissatisfaction followed by our conviction that excision plus primary closure was a more acceptable and better option for our patients. Under these circumstances, random selection was neither justifiable nor feasible. Therefore, bearing these limitations in mind, the findings of our study lead us to conclude that most pilonidal sinus can be managed by excision and primary closure. Where possible, patients who develop early failure of primary healing due to wound infection should have the benefit of secondary closure.

References

1. Lord PH, Mallar DM. Pilonidal sinus: a simple treatment. *Br J Surg* 1965; 52: 298-300.
2. Stansby G, Gnealtorex R. Phenol treatment of pilonidal sinus of the natal cleft. *Br J Surg* 1989; 76: 729-730.
3. Dwight RW, Maloy JK. Pilonidal sinus: Experience with 449 cases. *N Engl J Med* 1953; 249: 926-930.
4. Khaira HS, Brown JH. Excision and primary suture of pilonidal sinus. *Ann R Coll Surg Engl* 1995; 77: 242-244.
5. Gwynn BR. Use of rhomboid flap in pilonidal sinus. Ann R *Coll Surg Engl* 1986; 68: 40-41.
6. Al-Homoud SJ, Habib ZA, Abdul Jabbar AS, Isbister WH. Management of sacrococcygeal Pilonidal disease. *Saudi Med J* 2001; 22: 762-764.
7. Sondenna K, Anderson E, Soriede JA. Morbidity and short term results in a randomized trial of open compared with closed treatment of chronic pilonidal sinus. *Eur J Surg* 1992; 158: 351-355.
8. Al-Hassan HK, Francis IM, Neglen P. Primary closure or secondary granulation after excision of pilonidal sinus? *Acta Chir Scand* 1990; 156: 695-699.
9. Garner JS, Jarvis WR, Emori TG, Horan TC, Hughes JM. CDC definitions of nosocomial infection. *Am J Infect Control* 1988; 16: 128-140.
10. Khaira HS, Brown JH. Excision and primary suture of pilonidal sinus. *Ann R Coll Surg Engl* 1995; 77: 242-244.
11. Allen-Mersh IG. Pilonidal sinus: finding the right track for treatment. *Br J Surg* 1990; 77: 123-132.
12. Clothier PR, Haywood IR. The natural history of postnatal (pilonidal) sinus. *Ann R Coll Engl* 1984; 66: 201-203.
13. Klass AA. The so called pilonidal sinus. Can Med Assoc J 1956; 75: 737-742.
14. Williams RS. A simple technique for successful primary closure after excision pilonidal sinus disease. *Ann R Coll Surg Engl* 1990; 72: 312-315.
15. McDermott FT. Pilonidal sinus treated by Z-plasty. Aust N Z *J Surg* 1967; 37: 64-69.