Pilonidal Sinus:

A Claim for Simple Track Incision*

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VARIOUS SURGICAL METHODS are used for treatment of pilonidal sinus. Many investigators recommend conservative treatment: incision, marsupialization or phenol injection.[1, 3, 9] Others favor more radical surgical excision with or without primary suture; with or without flaps.[4, 6] This investigation was undertaken to elucidate how selection of the surgical method influences the final results. The study had two parts. In Part I, we analyzed the healing times and the numbers of one-year recurrences related to three techniques, incision, marsupialization, and excision without primary suture of the wound. In the second part, we studied a group of patients treated by simple incision, the best method, in our experience, to determine whether the time of return to work had any influence on the healing process.

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Part I

Material and Method

Thirty-six patients, randomly allocated to three groups alternately, were treated surgically. The techniques employed in these three groups were marsupialization (Group I), incision (Group II), and excision without suture (Group III). Patients treated by excision or marsupialization were operated on using general anesthesia. For those treated by incision, local anesthesia (procaine, 2%) was used. With the excision technique, an elliptical incision was placed at the midline. It included all sinus openings; when a secondary sinus lay laterally, the incision was extended to incorporate it.

With the incision technique, a fistula director was passed into the primary opening and made to emerge through any secondary fistulous opening. The skin between the two openings was then incised. Any hairs contained in the sinus were removed.

TABLE 1. *Patients Classified According to Treatment*

Treatment	Patients' Ages (Years)	Length of Lesion (cm)	Number of Fistulous Openings	Position at Work
Excision (n = 14)				
Mean	29	6	2	Sitting, 4
SD	± 11.9	± 2.6	± 1	Standing, 10
Incision (n = 14)				
Mean	26	7	3	Sitting, 7
SD	± 6.5	± 2.6	± 1.7	Standing, 7
Marsupialization (n = 14)				
Mean	23	5	3	Sitting, 8
SD	± 4.2	± 2.2	± 1	Standing, 6

TABLE 2. *Times to Healing*

	Days	
	Mean	SD
Excision	82	± 36.8
Incision	39	± 17.6
Marsupialization	37	± 6.7

No preoperative treatment was given. On the first postoperative day, the dressing was removed, and the wound was washed three times a day with plain water. Patients were discharged from the hospital on the third postoperative day. The patient was asked to wash the wound with water three times a day and to keep it dry with clean gauze. A recommendation to shave the area twice a week was also given. Patients were asked to attend the outpatient clinic once a week until final healing of the wound. After that, they were examined every three months. The patients began work a week after complete healing was achieved. Ages, types of occupation (sitting or standing), lengths of the lesions, and numbers of fistulous openings of the patients classified in the three groups are shown in Table 1.

Results

Mean healing times and standard deviations for the three operations performed are shown in Table 2. Previous statistical work, using the Snedecor test, allowed us to apply student's t test to compare the mean healing times of marsupialization versus incision and the Behrens–Fisher test for comparisons of other techniques. The results are presented in Table 3. We found significant differences between Groups I and III and Groups II and III, but no difference between Groups I and II could be detected. Therefore, we conclude that there is a delay in healing time of patients treated by excision, compared with those treated by marsupialization or incision.

The recurrence rates of 7.1 per cent were the same for the three operations. Recurrences took place three months after operation. It was decided not to continue Part I of the study as it was soon clear that there was a significant difference in the results of the three methods, the excision technique being the least satisfactory. We were unable to demonstrate any significant difference between the incision and marsupialization methods. Furthermore, according to our experience, marsupialization necessitated three days of bed rest to avoid breakdown of the suture. Consequently, it was decided to treat these patients by simple incision, leaving the wound to granulate. The procedure was performed at the outpatient clinic.

A study of the patients' daily activities before the wounds healed showed clear evidence that they were typical of the general population. Furthermore, after the third postoperative day patients had very little discomfort. We concluded that work activity before the wound closed did not influence the healing process. In order to prove this, a randomized trial was performed.

TABLE 3. *Statistical Comparison of Times to Healing*

Groups	Snedecor Test	Student's t Test	Behrens–Fisher Test
Incision *vs.* excision	$F = 4.3$	–	$d = 0.01$
Marsupialization *vs.* excision	$F = 30$	–	$d = 0.01$
Incision *vs.* marsupialization	$F = 2.4$	$p > 0.7$	–

Part II

Material and Methods

Sixty patients were operated upon without any preoperative measure; in each case the sinus was incised as an outpatient procedure. Patients were randomly allocated in two groups. The first group comprised 29 patients who returned to work before the wound had completely healed. The second group included 31 patients who returned to their activities one week after epithelization of the wound. Surgical techniques and controls were similar to those used in the previous study.

Results

Of the 29 patients in the first group, 16 began to work in the first week postoperatively and 13 on the second week. None had to leave work because of a painful wound. The mean healing times and standard deviations for these two groups of patients are shown in Table 4. Students' t test showed a significant difference between the two groups ($P<0.05$).

TABLE 4. *Effects of Work Activity on Wound Healing Time*

	Number of Patients	Healing Time (Days) Mean	SD
Returned to work before wound healed	29	27	± 13
Returned to work a week after wound healed	31	39	± 17.6

Discussion

The results obtained in the first part of our own study, so far as recurrences and healing time are concerned, are similar to those in other series.[1, 3, 7, 9] Therefore, we think that our results are valid in spite of the small number of patients included in each group. Some investigators advocate the excision technique and closure by secondary intention because 1) it is thought that pilonidal sinus has a congenital etiology; 2) there are difficult cases; 3) it is thought that the wide scar that contains no hair follicles favors fewer recurrences.[2, 5, 8] In our experience the excision and secondary closure technique does not offer any advantage, as the number of recurrences is not smaller than those associated with other more conservative techniques, such as incision and marsupialization. On the other hand, healing time is so prolonged that use of the technique is not advised.

There are, however, exceptionally complicated cases in which excision of the abnormal area is mandatory. A typical example of this is the case of a patient who had 50 openings in an area 4 × 4 cm. Fortunately, these cases are exceptions; we had only one complicated case among 101 cases in a two-year period. This represents a marked difference from other series that claim higher proportions (almost 26%) of complicated cases. However, in these series no explanation regarding the nature of the complications is given.[6]

It is surprising that wound healing proceeds more quickly in patients who begin work before the wound is closed. This could suggest that simple incision is better than excision and closure by first intention. The latter technique is used to promote quick healing and fewer recurrences. In our series the laying-open technique did not provide as good results, so far as the number of recurrences was concerned, as those obtained in a similar series in which suture of the wound was essential.[4] On the other hand, our results compare favorably with those of some other series.[3, 6, 7]

The incision technique, carried out with local anesthesia as an outpatient procedure, allows the patient to begin work without pain in a shorter period than when excision with closure by first intention is used.[3, 4]

Summary

Ninety-six patients treated surgically for pilonidal sinus were examined in a two-part study. In the first part, 36 patients were randomly allocated according to the surgical techniques employed: marsupialization, incision, and excision without primary closure. Healing times and recurrences a year after operation were studied. The healing times of patients treated by excision were longer in comparison with those treated by incision or marsupialization. The recurrence rates were similar for all techniques used.

In the second part of the study 60 patients were randomly allocated according to times of returning to work. Twenty-nine of these patients returned to work before their wound healed; 31 resumed work a week after epithelization of the wound. The wounds healed more quickly in patients who started working before they were closed.

Incision of the sinus track, carried out using local anesthesia in the outpatient clinic, allowed the patient to return to work without pain sooner.

References

1. Abramson DJ, Cox PA: The marsupialization operation for pilonidal cysts and sinuses under local anesthesia with lidocaine: An ambulatory method of treatment. Ann Surg 139: 341, 1954
2. Close AS: Pilonidal cysts: An analysis of surgical failures. Ann Surg 141: 523, 1955
3. Goodall P: The aetiology and treatment of pilonidal sinus: A review of 163 patients. Br J Surg 49: 212, 1961
4. Holm J, Hultén L: Simple primary closure for pilonidal disease. Acta Chir Scand 136: 537, 1970
5. Kooistra HP: Pilonidal sinuses: Review of the literature and report of three hundred fifty cases. Am J Surg 55: 3, 1942
6. Lamke LO, Larsson J, Nylén B: Resuts of different types of operation for pilonidal sinus. Acta Chir Scand 140: 321, 1974
7. Palumbo LT, Larimore OM, Katz IA: Pilonidal cysts and sinuses: A statistical review. Arch Surg 63: 852, 1951
8. Rogers H: Pilonidal sinus. Surg Gnecol Obstet 57: 803, 1933
9. Shorey BA: Pilonidal sinus treated by phenol injection. Br J Surg 62: 407, 1975