
THE CLOSED TECHNIQUE IN THE TREATMENT OF PILONIDAL SINUS GIVES SUPERIOR RESULTS TO THE CONVENTIONAL OPEN TECHNIQUE; A PROSPECTIVE STUDY

Safwan A Taha

CABS, Professor, Dept. of Surgery, University of Basrah College of Medicine and Consultant Surgeon, Al-Sadir Teaching Hospital, Basrah; IRAQ.

Abstract

The aim of this study is to compare between excision followed by primary closure as the first type of treatment and excision with laying the tract open, to heal by granulation, as a second type of treatment of pilonidal sinus.

Seventy three patients were included in the study. They were divided randomly into two groups, group A and group B, the first group was treated by closed method and the other by open method. Data were collected and analyzed regarding recurrence rate, time needed for full healing, infection rate and duration of hospital stay.

Thirty-five patients comprised group A (30 males and 5 females) compared to 38 patients in group B (31 males and 7 females). The mean hospital stay for group A ranged from 3 to 6 days (mean=4.4 days) while for group B it ranged from 1 to 2 days (mean=1.2 days), a difference that is statistically extremely significant (P value <0.00001). The rate of wound infection was similar (2.8%) in both groups (one in 35 patients of group A and one in 38 patients of group B).

Primary closure has the advantages of quicker healing time, shorter post operative specialized medical care and less time off work.

Introduction

Sacrococcygeal pilonidal sinus is a common and well recognized entity the cause of which has been a matter of debate¹. In spite of a number of ingenious operative and non-operative techniques in the management of pilonidal sinus, no single technique can be relied upon to prevent recurrence of this benign yet troublesome condition. Once thought to be a congenital condition, it is now generally agreed that pilonidal sinus is most often an acquired condition due to accumulation of tough, bristly hair

penetrating the skin, or local hair growing into a skin crevice, pit or abnormal hair follicle. The most common site is the natal cleft but the condition may occur in other sites especially where there is a crevice or irregularity of skin surface with pressure or suction applied to the region like the interdigital pilonidal sinus².

Pilonidal sinus disease forms a symptom complex with presentation ranging from asymptomatic pits to painful draining lesions that are predominantly located in the sacrococcygeal region¹. There is a rather high incidence of post-operative complications and late recurrence rate after operative therapy of pilonidal sinus³. Option are now available that provide a

Correspondence to: Safwan A Taha; Dept. of Surgery, University of Basrah College of Medicine, Basrah; IRAQ. email= safwanat@yahoo.com

rapid cure, lower recurrence rate and a minimized number of hospital admissions⁴. The options of treatment of acute abscess include aspiration, drainage without curettage and drainage with curettage¹. Chronic pilonidal sinus disease is the term applied to patients with pilonidal sinus who have had a pilonidal sinus drained, it also refers to patients with pilonidal sinus that is associated with chronic discharge without an acute abscess. The surgical options for management of a non-complicated chronic pilonidal sinus include excision with primary closure, excision and laying open of the tract, wide and deep excision down to the sacrum and incision and marsupialization along with other similar procedures⁴.

Although numerous randomized clinical studies have evaluated different modalities of treatment, no clear consensus has been reached as to the optimal medical or surgical treatment⁴. The choice of a particular treatment depends on the surgeon's familiarity with the procedure and the anticipated result in term of low recurrence rate and quick healing¹.

Patients and methods

This is a prospective study that included 73 patients who presented with pilonidal sinus. Those presenting with pilonidal abscess or with recurrent sinuses that were previously treated surgically were excluded from the study to further eliminate the variables. The patients were randomly allocated into 2 groups. Those who presented on an odd-numbered day were allocated to group A and were subjected to the conventional open technique; they were 35. On the other hand, those who presented on an even-numbered day were allocated into group B and were subjected to primary closure; they were 38. Technically, both approaches were performed according to the "standard procedure" relevant. The

initial steps are similar in both techniques. Methylene blue was routinely injected into the sinus to facilitate total excision of the involved tissue which was removed, en-block, down to the presacral fascia with the minimal amount of skin possible. For patients in group A, this represented the end of the procedure and their wounds were packed, dressed and left to heal by secondary intention, a process that usually took weeks; while for patients in group B, wound edges were undermined a little and the full thickness of the wound edges were closed, in the midline, by 0 nylon mattress sutures that passed through the presacral fascia in the centre of the wound cavity. Meticulous hemostasis was secured throughout the procedure. Stitches were removed on the 10th postoperative day. All patients, in both groups, were seen on the 3rd, 7th and 10th days following surgery. Afterwards, they were followed up at weekly intervals until complete healing took place and three-monthly after that, for 2 years, to check for recurrence. Infection was defined as escape of pus, whether spontaneous or therapeutic, from the wound and simple redness of the wound that resolved with treatment was not regarded as infection. The study didn't include the patients who failed to show for follow up. Data collected, and analysed, included the length of hospital stay, rate of wound infection, time needed for complete healing and recurrence rate.

Results

Thirty-five patients comprised group A (30 males and 5 females) compared to 38 patients in group B (31 males and 7 females). The mean hospital stay for group A ranged from 3 to 6 days (mean = 4.4 days) while for group B it ranged from 1 to 2 days (mean = 1.2 days), a difference that is statistically extremely significant (P value <0.00001). Details

are shown in table I. The rate of wound infection was similar (2.8%) in both groups (one in 35 patients in group A and one in 38 patients in group B).

Primary healing of the wounds, the idea behind the whole concept of primary closure, took place in all the 38 patients of group B, something that was not even thought of in group A. On the other hand, time needed for complete healing of the wound in group B ranged from 10 to 12 days (mean =10.5 days). Comparable figures in group A were 21 to 26 days (mean =24 days) respectively, a result that is statistically significant too (Chi square=3.8, degree of freedom=1).

Discussion

Different methods of treatment of pilonidal sinus are in practice. The main step in the treatment is excision of the sinus in entirety which entails excision of the midline pits and the lateral extensions down to the presacral fascia with removal of minimal surrounding skin. Excision of pilonidal sinus and laying the tract open, to allow healing by secondary intention, has been practiced as the option that ensures adequate drainage of the cavity, thus avoiding wound infection after primary closure, because even after excision of the sinus down to healthy presacral fascia the wound is still considered contaminated⁴. The disadvantage of laying the tract open lies mainly in the inconvenience it imparts to the patient with frequent dressing changes and the close observation needed to ensure proper healing which usually takes several weeks. Primary closure has the advantage of earlier wound healing but it requires that the patient restricts many of his activities albeit for a relatively short time⁴. This would not be considered a disadvantage putting in mind the long healing time required in the open method which also restricts the patient's activities

for a considerably longer period. In our study there was no difference in the rate of wound infection; neither there was a difference in recurrence rate both of which comprise a huge boost toward adopting primary closure. On the other hand there was a significant difference in hospital stay between the two groups in favor of primary closure; those with primary closure had shorter hospital stay than those who had open technique (a mean of 1.2 day compared with a mean of 4.4 day respectively, P value of < 0.00001). The other difference was in the time required for complete healing which was observed within 10-12 days in patients with primary closure compared with 21-26 days in those with open method (Chi square =3.8, degree of freedom =1). These results are clearly in favor of primary closure over the conventional open method.

Different studies were carried out to evaluate these two techniques of treatment of pilonidal sinus. Many of them showed that the primary closure is associated with shorter healing time ranging from 10 days to 23 days which is even higher than the healing time in our study, shorter hospital stay ranging from 2 to 4 days which is again higher than our results, and fewer post operative visits⁵⁻⁸.

Other studies favored the open method as a treatment of pilonidal sinus and they depended in their conclusion on the higher rate of recurrence that appeared in the closed technique in their series^{9,10}.

This difference is probably due to the lack of expertise or other causes of recurrence of pilonidal sinus such as obesity¹¹. In our study there was no difference in the recurrence rate in both groups.

In conclusion the primary closure has the advantages of quicker healing time, fewer post operative visits and shorter time off work without adding to the

morbidity even to the slightest extent. We recommend the primary closure as the

first choice of treatment of pilonidal sinus and that it should be carried out routinely.

Table I: Hospital stay and wound infection in both groups

Groups	Hospital stay		Wound infection	
	Duration(days)	Mean	Number	%
Group A	3-6	4.46	1	2.8%
Group B	1-2	1.2	1	2.8%

Table II: Healing of wounds and the recurrence rate

Groups	Recurrence	Time needed for full healing
Group A	0	21-26 days(M=24)
Group B	0	10-12 days(M=10.5)

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