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Original Research Article

Evaluation of open versus closed pilonidal sinus excision in Basrah, Iraq

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ABSTRACT

Background: Pilonidal sinus is a disease that most commonly arises in the hair follicles of the natal cleft of the sacrococcygeal area. Different modalities of surgery have been employed. The aim of this study is to evaluate the outcome of open versus closed pilonidal sinus excision among a sample of patient in Basrah of Iraq.
Methods: This is a prospective study conducted in two hospitals. The patients were randomly allocated into 2 groups. Group "A" consisted of 63 patients who underwent open pilonidal sinus excision and the other group (group "B") included 68 patients who underwent closed pilonidal sinus excision. Technically, both approaches were performed according to the "standard procedure". 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.
Results: One hundred and thirty-one patients include in this study, 63 patients comprised group "A" open pilonidal sinus excision (54 males and 9 females) compared to 68 patients in group "B" closed pilonidal sinus excision (56 males and 12 females). The rate of wound infection approximately was similar (3.17% in group "A" and 2.94% in group "B") two patients in both groups.
Conclusions: This study shows significant difference in patient duration needed to retain normal life activity between open and closed method. Closed method achieved shorter duration of recovery.

Keywords: Close, Open, Pilonidal sinus, Repair

INTRODUCTION

Pilonidal sinus is a disease that most commonly arises in the hair follicles of the natal cleft of the sacrococcygeal area. Incidence is reportedly 26 per 100 000 population, affecting males twice as often as females and predominantly young adults of working age.[1,2]

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.[3]

Pilonidal sinus disease forms a symptom complex with presentation ranging from asymptomatic pits to painful draining lesion that are predominantly located in the sacrococcygeal region causes significant morbidity, often with a protracted loss of normal activity.[2,4]

The management of chronic pilonidal disease is variable, contentious, and problematic. Principles of treatment require eradication of the sinus tract, complete healing of the overlying skin, and prevention of recurrence.[2]

There is a high incidence of post-operative complication and late recurrence rate after operative therapy of pilonidal sinus.[5]

Options are now available that provide a rapid cure, lower recurrence rate and a minimized number of hospital admissions allowed patients to return rapidly to normal activity.[2,6]

The option of treatment of acute abscess include aspiration, drainage without curettage and drainage with curettage.[4]

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.[6]

The management of chronic pilonidal disease is variable, contentious, and problematic. Principles of treatment require eradication of the sinus tract, complete quick healing of the overlying skin, and prevention of recurrence.[2,4]

The surgical wound may be left to heal by open healing (secondary intention).[2,6] Advocates of this technique state that reduced wound tension facilitates trouble free healing without recurrence if all sinus tracts are fully excised.[2] Alternatively, the wound may be closed to heal by primary closure (primary intention).[2,6] Methods can be broadly categorized as midline closure techniques (with the wound lying within the natal cleft) or other techniques (where the wound is placed out with the midline). Advocates of primary closure perceive benefits of faster tissue healing.[2]

Variations in current practice reflect the literature, which describes a wide spectrum in patient outcomes for different open and closed surgical techniques.

METHODS

This is a prospective study conducted in two hospitals, Al-Mawanee General Hospital which served urban area and Abu Al-khaseeb General Hospital which served rural area both in Basrah city, south of Iraq. Present study included 131 patients who presented with pilonidal sinus from January 2009 to March 2013. 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 63. 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 68. 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”, skin 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 analyzed, included the length of hospital stay, rate of wound infection, time needed for complete healing, time needed to retain to work and recurrence rate in addition to other complications or morbidity.

RESULTS

One hundred and thirty-one patients include in this study, 63 patients comprised group “A” (54 males and 9 females) compared to 68 patients in group “B” (56 males and 12 females). The mean hospital stays for group “A” ranged from 3 to 6 days (mean=4.1 days) while for group “B” it ranged from 1 to 3 days (mean=1.3 days), a difference that is statistically extremely significant (P value <0.00001). Details are shown in table I. The rate of wound infection approximately was similar (3.17% ingroup “A” and 2.94% ingroup “B”) two patients in both groups.

Table 1: Hospital stay and wound infection in both groups.

Groups	Hospital stay		Wound infection	
	Duration (days)	Mean	Number	%
Group A (63 patients)	3-6	4.1	2	3.17%
Group B (68 patients)	1-3	1.3	2	2.94%

Primary healing of the wounds, the idea behind the whole concept of primary closure, took place in all the 68 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 13 days (mean =11.3 days). Comparable figures in

group "A" were 21 to 26 days (mean =23.6 days) respectively, a result that is statistically significant, too (Chi square=121.133) (Table 2).

Table 2: The recurrence rate, healing of wounds and retain to work.

Group	Recurrence	Time needed for full healing	Time needed to retain to work
A	0	21-26 days(m=23.6)	17-28 days(m=20.6)
B	0	10-13 days(m=11.3)	11- 19 days(m=13.9)

The mean duration retains to work for group "A" ranged from 17 to 28 days (mean=20.6 days) while for group "B" it ranged from 11 to 19 days (mean=13.9 days), a difference that is statistically extremely significant (Chi square =100.084). No Pilonidal sinus disease recurrence was reported in this study.

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 openings 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 contaminated.[6] 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 to ensure proper healing which usually takes several weeks. Primary closure has the advantage of earlier wound healing, but it requires that the patient restrict many of his activities albeit for relatively short time.[6] This would not be considered a disadvantage putting in mind the long healing time required in the open method which also restrict the patient activities for a much longer period.

In present 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 favour of primary closure; those with primary closure had shorter hospital stay than those who had open technique (a mean of 1.3 days compared with a mean of 4.1 days respectively, P value of <0.00001). The other difference was in the time required for complete healing which was observed within 10-13 days in patients with primary closure compared with 21-26 days in those with open method (Chi square =121.133). These results are clearly in favour 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 present study, shorter hospital stays 2 to 4 days which is again higher than the results, and fewer post-operative visits.[7-10] The other studies favored the open method as a treatment of pilonidal sinus and they depend in their conclusion on the higher rate of recurrence that appeared in the closed technique.[11,12] This difference is probably due to the inexperience or other causes of recurrence of pilonidal sinus such as obesity.[13] In present 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. Author recommend the primary closure as the first choice of treatment of pilonidal sinus and should be carried out routinely.

This study shows significant difference in patient duration needed to retain to normal work between open and closed method, mean=20.6 days in group "A" compare to 13.9 days in group "B".

Although, time to return to work is a function of several other variables, including time to wound healing, pain, wound complications, wound breakdown, and other management factors, Pilonidal sinus has an economic impact as it predominantly affects younger populations.[2]

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