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ORIGINAL ARTICLE

Limberg Flap Versus Primary Midline Wound Closure in Treatment of Chronic Pilonidal Sinus Disease

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ABSTRACT

Objective: Current study aims to compare the Limberg flap technique with primary midline wound closure to treat the chronic pilonidal sinus disease.

Study design: A comparative study was done in Surgery Department Sir Ganga Ram Hospital Lahore from January 2020 to September 2021

Method: The sample size for the study is 60 patients who were regularly visiting the hospital due to PS disease. All the patients were divided into two groups A and B. Group A had 30 patients treated with the Limberg flap method and group B had 30 patients treated with primary midline wound closure. Before starting the treatment a brief description of the treatment was given to all patients and consent was signed from all participants. The final decision for treatment was decided by the team of senior surgeons as well as with help of the patient's own choice. Limberg flap and primary midline wound closure (PMC) were applied to patients who regularly followed the instruction for chronic pilonidal sinus treatment. Primary midline closure was applied on patients who had a cosmetic concern and did not have a recurrence problem**.**

Results: Total 60 patients were divided into two groups, Group A (Limberg flap) had 30 patients in which 25 (83%) were males and 5 (16.6%) females. The mean age for this group was 25 ± 5.00 years. The patients without a previous history of pilonidal sinus disease (primary case) was 17 (56.6%) and the recurrence case was 13 (14.3%). Group B (primary midline wound closure) had 30 patients in which 18 (60%) were males and 12 (40%) females. The mean age for this group was 28 ± 3.00 years. The patient without a previous history of pilonidal sinus disease (primary case) was 28 (93.3%) and the recurrence case was 2 (6.6%). The comparison of 3rd-week outcomes shows that in group A 25 (83,3%) patients had painless walking, 23 (76.6%) patients start their routine work and 26 (86.6%) patients had treatment satisfaction. In group B 21 (70%) patients reported painless walking, 18 (60%) patients started their routine activity and 22 (73.3%) patients shows satisfaction with treatment.

Conclusion: Hence we concluded that a better improvement percentage was measured high in group A (Limberg flap) than group B (PMC). Therefore limberg flap is better technique to treat the chronic pilonidal sinus disease.

Keywords: chronic Pilonidal Sinus, primary midline wound closure (PMC), Limberg flap

INTRODUCTION

The most common infection of skin specifically near the upper portion of the buttocks' natal cleft is a pilonidal sinus disease.[6] Pilonidal sinus has increased the disease burden especially in younger people of age 20 to 30 years.[7] Overall treatment duration varies from weeks to months and a 34% recurrence rate was reported.[5] Men are more prone to the pilonidal sinus (PS) disease as compared to the females and for the general population its estimated incidence rate is 26/100,000/year.[1] The number of methods used for the treatment of PS but the most preferable method with a lower rate of recurrence is still under discussion.[2] The surgical procedures used for PS treatment varies from flap reconstruction to invasive procedures. Flap techniques including V-Y flap, Z-plasty, Limberg, Rhomboid, and karydakis are deemed dominant concerning recurrence than primary midline closure technique.[3] Although, mostly female patients chose the primary midline wound closure method because of cosmetic concerns rather than focusing on recurrence level. If surgical closure is preferred, then flap technique particularly flap Limberg and karydakis is highly recommended.[4] However, a comparative study demonstrated the best results of the Limberg flap procedure as compared to secondary wound healing.[8] One more control randomized trial shows the best response of 140 patients treated with the Limberg flap technique as compared to secondary wound healing.[9] Literature is flowing with the comparison of flap techniques with other procedures but in this study, we will enlighten the comparative results of the flap limberg method and primary midline wound closure to treat the pilonidal sinus disease.

MATERIAL AND METHODS

This is a comparative study conducted at surgery department Sir ganga Ram Hospital Lahore . The sample size for the study is 60 patients who were regularly visiting the hospital due to PS disease. All the patients were divided into two groups A and group B. Group A had 30 patients treated with the Limberg flap method and group B had 30 patients treated with primary midline wound closure. Before starting the treatment a brief description of the treatment was given to all patients and consent was signed from all participants. The final decision for treatment was decided by the team of senior surgeons as well as with help of the patient's own choice. Limberg flap and primary midline wound closure (PMC) were applied to patients who regularly followed the instruction for chronic pilonidal sinus treatment. Primary midline closure was applied on patients who had a cosmetic concern and did not have a recurrence problem. If the patients were suffering from a recurrence problem or have concerns of recurrence then the Limberg flap method was preferred. After the one day of operation, the patients were discharged but a follow-up of few months was given to the patient based on regular checks up to determine the pain, complications, and recurrence rate.

Exclusion criteria: All the patients above 40 years were excluded from the study. Pregnant women, patients suffering from psychiatric disease and unfit for anesthesia were not the part of the study.

Statistically analysis: The statistical calculation was carried out using SPSS version 23. All the data for comparing both techniques were tested using the T-test and obtained result for the significance was identified using a p-value <0.05.

RESULTS

Total 60 patients were divided into two groups (table 1), Group A (Limberg flap) had 30 patients in which 25 (83%) males and 5 (16.6%) females. The mean age for this group was 25 ± 5.00 years. The patient without a previous history of pilonidal sinus disease (primary case) was 17 (56.6%) and recurrence case was 13 (14.3%).

Group B (primary midline wound closure) had 30 patients in which 18 (60%) were males and 12 (40%) females. The mean age for this group was 28 ± 3.00 years. The patient without a previous history of chronic pilonidal sinus disease (primary case) was 28 (93.3%) and recurrence rate was 2 (6.6%).

After the treatment two common complaints were reported by the patients of both groups. In group A 18 (60%) patients were reported pain and 12 patients (40%) developed swelling . In group B 22 (73.3%) patients suffering from pain and swelling in 21 (70%) patients. Comparison of both shows that high complaint was reported for group B.

The comparison of 3rd-week outcomes (table.2) shows that in group A 25 (83,3%) patients had painless walking, 23 (76.6%) patients start their routine work and 26 (86.6%) patients had treatment satisfaction. In group B 21 (70%) patients reported painless walking, 18 (60%) patients started their routine activity and 22 (73.3%) patients shows satisfaction with treatment. P-value for both methods was reported less than 5. Hence we found that an improved percentage was measured high in group A (Limberg flap) than group B (PMC) as well a high percentage of females was found who preferred the PMC method for treatment.

Table 1: General characteristic of study

Characteristic	Group A (limberg flap), n=30	Group B (primary midline closure), n=30	P-value
Patients age (mean ±S.D)	25 ± 5.00	28 ± 3.00	0.32
Gender			
Male	25 (83%)	18 (60%)	0.71
Female	5 (16.6%)	12 (40%)	0.61
Primary case	17 (56.6%)	28 (93.3%)	0.05
Recurrence case	13 (43.3%)	2 (6.6%)	0.04

Table 2: Comparison of limberg flap and primary midline wound closure

Parameters	Group A, n=30 (%)	Group B, n=30 (%)	P-value
Complaint			
Pain	18 (60%)	22 (73.3%)	>0.05
Swelling	12 (40%)	21 (70%)	>0.05
3rd week outcomes			
Painless walking	25 (83.3 %)	21 (70%)	<0.01
Starting routine activity	23 (76.6%)	18 (60%)	<0.01
Patients satisfaction	26 (86.6%)	22 (73.3%)	<0.01

DISCUSSION

However, several procedures were adopted for the treatment of chronic pilonidal sinus but it is still under research to find the most suitable method for Pilonidal surgery.[11] There were many complications reported after treatment of pilonidal surgery but the most common are recurrence and prolong recovery time that hinders the normal routine life of the patient.[12] Therefore, recurrence rate and complications are the most concern parameter for the cure of chronic pilonidal sinus. In our study, we found high satisfaction parentage 86.6% in the Limberg flap method with ameliorated response in terms of other issues such as pain and swelling. A study attempted Limberg flap method results and demonstrated that Limberg flap is most suitable as compared to primary midline wound. As It was best regarding the hospital stay time and time required to go back to work.[10] Whenever flap methods are preferred for Pilonidal surgery patients face discomfort due to aesthetical reasons.[13] Therefore in the current study we omitted the patients who were unfit for anesthesia. Another study found that the recurrence rate was highest for primary midline closure as compare to Limberg flap to treat the pilonidal sinus.[14]

CONCLUSION

Considering the patients with a high percentage of satisfaction and coming back to routine work shows that Limberg flap should be the more preferable method to treat the chronic pilonidal sinus as compare to the primary midline closure.

Conflict of interest: No conflict of interest was found related to this study.

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