

LIMBERG'S FLAP: OUR EXPERIENCE OF 50 PATIENTS AT MTH

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ABSTRACT

OBJECTIVE: To determine the results of Limberg's flap procedure in pilonidal sinus in terms of procedural safety and complications.

STUDY DESIGN: A prospective analytical study

PLACE AND DURATION OF STUDY: Study was conducted in surgical department of Madinah Teaching Hospital Faisalabad for one and a half year.

METHODOLOGY: In this study 50 consecutive patients of pilonidal sinus who underwent Limberg flap procedure were included. After discharged from ward follow up visit was done on weekly basis for 1st month and monthly for next six month.

KEY WORDS: Pilonidal sinus, Limberg's flap, Rhomboid flap

RESULTS: Out of 50 patients operated 47 (94%) were male and 3 (6%) were female (table 1). The age of patients ranged from 20-40 years with the median age of 25 years. All were operated electively after preparing for anesthesia. Rhomboid excision with Limberg flap reconstruction was done (Fig. 1-4). All were followed in outdoor after discharged from ward. Morbidity developed in 3 patients (infection in one, one having wound seroma formation and only one came with recurrence (table 2). Not a single patient were having flap necrosis or wound dehiscence. Almost all patients were pain free and all of them returned to work after treatment for their complication. The average hospital stay was 4-5 days and returned to work was after 15 days.

CONCLUSION: Limberg Flap reconstruction with rhomboid excision technique of treating sacrococcygeal pilonidal sinus is beneficial in chronic cases with minimal recovery time and early return to work.

INTRODUCTION:

Pilonidal sinus is a benign disease more common in young adulthood. We here feel this chronic problem more commonly in males than in females. This disease is present in various sites but the most common site is sacrococcygeal region. Mostly if neglected initially it results in inflammation which further result in abscess formation. This abscess may discharge forming sinus and chronic

inflammation in pre-sacral region.

Previously it was described as congenital disease but now it is known to be acquired. As known to be the sinus is a blind track. In this case this track extends from skin to the pre-sacral fascia. The unique feature of Pilonidal

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sinus is presence of tuft of hairs in most clinical cases. During World War II the disease were more common in jeep-drivers which is the reason of becoming acquired theory. Hair preserved in sinus tract is around 60%. Male sex hormone, pilo-sebeceous unit with wide open mouth to receive hairs somehow explain the acquired model². With surgical expertise and recent advances Pilonidal is not considered to be a major issue, however if we consider gender age it is more common in young males. If we consider how worse is the problem it can easily effect daily working activities i.e.³ education, labour etc therefore when we consider the treatment options, resumption of daily activities is as important as the rate of recurrence. There are various ways to treat Pilonidal Sinus but still the best option is under question. The ideal treatment should ensure less hospital stay, low risk of complications, pain free, rapid return to work and low recurrence rate⁴. Excision and primary closures have certain advantages including shorter surgery and hospitalization time however low recurrence have been observed in flap method⁵. Now Limberg's Flap for Pilonidal Sinus is having less recurrence rate, low chances of infection, good pain control, and early return to work⁶ and is useful, safe and effective⁷. Pilonidal Sinus is a chronic disease, patient mostly presents with intermittent discharge and pain at sacrococcygeal area. Limberg Flap procedure is better than the other means of surgical treatment i.e. simple excision and primary closure⁸. Taking in view of this we did Limberg's Flap procedure in all our patients in surgical department who presented with pilonidal sinus. Complication rate was not significantly higher than other procedures rather lower. In this study we present our experience of 50 cases regarding the complication of this procedure. Patients in whom other procedures were done were not included in this study.

PATIENTS AND METHODS:

The time period of study was between Jan 2014 to July 2015 whereby 50 patients with pilonidal sinus in sacrococcygeal area were included. Written informed consent for anesthesia and surgery were taken. Patients underwent rhomboid excision and Limberg flap procedure.

All patients were operated mostly under spinal anesthesia by consultant surgeons. The operated area was marked by a marker pen (Fig -1). A diamond-shaped incision which includes the sinus and its extensions made to the marked area. The lesion was excised with deepening of the incision. The flap was then constructed extending the incision laterally and inferiorly to the gluteal fascia (fig.3). Tension free rhomboid flap was then rotated from the gluteal fascia to the excised area. The subcutaneous tissue were dealt with suturing of absorbable suture and skin closed with non absorbable one with interrupted technique (fig. 4). The debridement was adequate and defect was closed without difficulty with the placement of suction drain. Postoperatively all patients were given broad spectrum intravenous antibiotics for first 48 hrs followed by oral one for next 8 days combined with wound dressing daily. The sutures of skin were removed on the fourteenth postoperative day taking in view of wound condition. Post operative infection, hospital stay, duration of inability to work, wound dehiscence, and recurrence were recorded. Duration of inability to work was defined as the time from the date of surgery to the date on which the patient returned to normal activities, including employment. The patients were regularly followed up for a period of 6 months. Post operatively patients were evaluated for complications and hospital stay.



Figure 1: Marking of rhomboid incision and Limberg's flap



Figure 2: Defect after rhomboid excision



Figure 3: Making Limberg Flap



Figure 4: Immediate postoperative photograph

RESULTS:

Out of 50 patients operated 47 (94) % were male and 3 (6%) were female (table 1). The age of patients ranged from 20-40 years with the median age of 25 years. All were operated electively after preparing for spinal anesthesia. Rhomboid excision with Limberg flap reconstruction done. All were followed.

Morbidity developed in only 3 patients. There was one patient each with seroma formation (2%) and infection (2) and only one came back with recurrence (2%). There was no wound dehiscence.

Table 1

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|----------------------|------|-----|
| Total Patient | n=50 | |
| Male | 47 | 94% |
| Female | 3 | 6% |

Table 2. Postoperative complications

| Complications | Number | Percentage |
|-----------------------------|---------------|-------------------|
| Seroma | 1 | 2% |
| Infection | 1 | 2% |
| Necrosis at tip of the flap | 0 | 0% |
| Gaping | 0 | 0% |
| Recurrence | 1 | 2% |

Not a single patient was having flap necrosis or wound dehiscence (table 2). Almost all patients were pain free and all of them returned to work after treatment for their complication. The average stay was 4-5 days with the average duration of inability to work was 15 days.

DISCUSSION:

Considering all available treatment options for Pilonidal Sinus the choice for better treatment should include the one with minimal tissue loss, excellent cosmetic results, low rate of post operative morbidity, rapid resumption to work along with low recurrence rate and cost⁹. However although various conservative, medical and surgical methods have existed no management plan cover all these features¹⁰.

The main technical difficulty of Pilonidal Sinus Surgery is not only the debridement or removal of Sinus or sinuses but rather covering the remaining defect. The excision with packing and daily dressing of wound is associated with long recovery period¹¹. On the other method like primary closure, rapid recovery with early resumption of daily activities noted but there are higher chances of complications and recurrence¹².

The reasons for these complications of primary closure are scar of incision in midline, the

inability to flatten the natal cleft and wound tension. To overcome these complications of primary closure various techniques have been attempted to eliminate the causes due to which negative results occurs like recurrence rate¹³. Excision with flap technique is found to be the better and treatment of choice due to decreased release rate associated with flattening of natal cleft, healing without tension and better cosmetics results¹⁴.

There is still debate on multiple options for Pilonidal sinus treatment that which method should be considered at the top. Complications like recurrence and aesthetic outcome were found to be major problem in management¹⁵. If the complications occur, the recovery time is prolonged which results in prolonged hospital stay, increase treatment cost. This leads to delay the patient's return to normal daily life activities. Therefore, complication are crucial parameters in evaluating the effectiveness of the surgical method. Regarding post operative complications, Al-Khayat et al reported a complication rate of 11.7% i.e. infection, necrosis and wound dehiscence etc¹⁶. On the other side Polat et al reported about 11% of such complications¹⁷. There are various studies of quite distinct values regarding the recurrence rate after surgical treatment 7.6% and the mean recurrence rate is 1.5%¹⁸ but our study shows just 2%.

Ertan and his colleagues determined in their study recurrence rate of 2% in the Limberg's flap and 12% in the primary closure method which is again comparable with our study (2%). He also showed that the Limberg's flap method resulted in a better outcome regarding recurrence, wound healing, return to work and general health conditions¹⁹. In this research complication such as postoperative wound was quite higher than our study. While in our study it was 2%, Eatan reported it 16.7%¹⁹. This low infection rate may be due to adaption of better sterilization procedures, appreciate use of antibiotics and good surgical techniques.

In a recent Turkis study, BaliIII and colleagues, compared the results of Pilonidal sinus with karydakis flap and have found the use of the limberg flap, associated with lower complication rates, shorter length of hospital stay, early return to work as well as low pain score and better complete healing duration and patient

satisfaction²⁰.

In our study, we have found Limberg's flap as safe choice for treating sacrococcygeal Pilonidal sinus due to its low complications rate and early return to work recurrence, similar to the values reported in the literature. Therefore, we recommend the limberg's flap procedure for the treatment of Pilonidal sinus disease.

CONCLUSION:

According to the results of this study, Limberg flap method has better outcomes regarding complications and return to work. Therefore our recommendation is Limberg flap for treatment of Pilonidal sinus disease.

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Generosity is to help a deserving person without his request, and if you help him after his request, then it is either out of self-respect or to avoid rebuke.

There is no greater wealth than wisdom, no greater poverty than ignorance; no greater heritage than culture and no greater support than consultation.

Hazrat Ali (Karmulha Wajhay)