

A Study on Limberg Flap in Management of Pilonidal Sinus in a Tertiary Care Center**L. Venkateswara Reddy**

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Conflict of interest: Nil

Abstract:**Background:** Pilonidal sinus is found in natal cleft overlying the coccyx, and consists of non-infected midline openings which communicate with a fibrous tract lined by granulation tissue and containing hair lying loosely within the lumen. Treatment aims at clearing all the tracts and closure of the defect formed.**Objectives:** This study aims at assessing the use of Limberg rhomboid Flap technique in the treatment of pilonidal sinus in terms time taken for the procedure, post-operative pain, recovery time and post-operative complications.**Materials and Methods:** This was a Prospective study done for two years in 20 patients of Pilonidal sinus. The statistical analysis of data was done and results were obtained.**Results:** Out of the 20 patients, 12 were male (60%) and 8 were female (40%). The mean duration of procedure for open technique was 58.40 mins. Post-operative pain experienced was significantly low. Recovery time was significantly low (mean of 10.5 days). 4 patients (20%) developed wound discharge and one patient had flap necrosis and revision, none of the patients had recurrence during follow up for 6 months.**Conclusion:** Limberg rhomboid flap technique is the most effective surgery to treat pilonidal disease with effective and speed recovery in the post-operative period.**Keywords:** Pilonidal sinus, Limberg rhomboid flap.

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Introduction

Pilonidal sinus disease was first reported 150 years ago. The incidence of pilonidal sinus disease is approximately 0.7%. The term Pilonidal sinus describes a condition found in natal cleft overlying the coccyx, consisting of one or more; usually non infected midline openings which communicates with a fibrous tract lined by granulation tissue and containing hair lying loosely within the lumen. [1,2,3] The disease is common in young adults, mostly males. [4,5] The disease is rare after 50 years of age. This is also known as "jeepers bottom, jeep riders' disease or jeep disease". [6] Pilonidal sinus disease is caused by hairy back, warm sweaty conditions, obesity leading to friction and negative suction at natal folds. Pilonidal sinus over a long period has remained a disease where recurrent abscess, recurrent sinuses are extremely common. The etiology and pathogenesis of pilonidal sinus is remaining unclear by this time. [6,7]

Various methods of treating pilonidal sinus have been evolved since 1965, in the form of tract curettage/brushing with excision of follicle opening, Phenol injection into tract and healing by secondary intention, Excision of pilonidal sinus

down the sacral fascia, Excision and primary closure, Excision up to sacrum and skin flap. Excision of sinus and Limberg Rhomboid skin flaps appears most promising, with fast recovery and low recurrence rate, minimal patient inconvenience and minimum time off work. This study aims at assessing the use of Limberg rhomboid Flap technique in the treatment of pilonidal sinus in terms time taken for the procedure, post-operative pain, recovery time and post-operative complications.

Materials and Methods

This was a Prospective study done for two years in 20 patients of Pilonidal sinus. The statistical analysis of data was done and results were obtained. Patients between 14 – 45 years age having Pilonidal sinus were included in the study. Patient with Pilonidal abscess, patients on cancer or immunosuppressant were excluded.

All patients were subjected to complete history taking and routine clinical, local examination and laboratory investigations. MRI pelvis was done to know the anatomy and secondary tracts along with other investigations. Assessment of the pain was

done by using Visual analogue scale, total recovery time as a time period from admission in the hospital till the resumption. After the positioning of the patient in jack-knife position and the preoperative preparations the planned excision site is marked with a pen in the shape of a rhombus with 60 degrees vertically and 120 degrees horizontally containing the sinus orifices and tracts. Following that the subsequent mobilized flap is marked with a pen on the contra lateral side.

That vertical line is prolonged within that procedure medially and caudally with an angle of 60 degrees, until it is corresponding to the edge length of the rhombus respectively (9) to the same dimension. As the required tissue can be estimated better after the removal of the affected area, this step should be performed after the excision of the rhombus down to the sacrococcygeal fascia. In the next step hemostasis is achieved by diathermy, the fasciocutaneous flap is mobilized below the gluteal fascia and transposed tension free medially to cover the excised area. Wound closure is performed after the implementation of a suction drain. [8]

Results:

Out of the 20 patients, 12 were male (60%) and 8 were female (40%). The mean age of presentation was 31.48 ± 5.12 years. The mean duration of procedure for open technique was 58.40 mins. Post-operative pain experienced was significantly low. Recovery time was significantly low (mean of 10.5 days). 4 patients (20%) developed wound discharge and one patient had flap necrosis and revision, none of the patients had recurrence during follow up for 6 months.

Discussion:

Pilonidal Sinus Disease has become a common disease affecting the young. It is under reported and yet it does significantly cause discomfort and morbidity to the patients that draws them to the surgeons mostly when complications of the disease arise. [4] Definitive treatment is best provided when the patient initially presents to the surgeon to prevent loss of time from work and distress to the patient. The ideal treatment should ensure low pain, short hospitalization period, low risk of complications, rapid return to normal activities, better cosmesis, and should have a low recurrence rate. In our study, pilonidal sinus was found to be common in age group 20-39 years.

The youngest was of 20 years and oldest was of 42 years. The average age of patients at the time of presentation was 29 years. A study conducted by Oner Montes et al, [8] pilonidal sinus was found to be common in age group of 18.95 – 32.16 years and the average age of the presentation was 25 years of age. The male to female sex ratio in our study was 1.5:1. In a study by Sheeraj Shakoor et al

[9] noted male to female ratio as 3:1 and in population study at Minnesota, male to female ratio was found to be 4:1. The mean duration for Limberg rhomboid technique was 58.40 mins. So Limberg rhomboid technique takes longer time to perform than open technique. Post-operative pain was compared using Visual analogue scale (VAS). It was compared on post-operative day 1, postoperative day 3 and the day of discharge. In our study, we found that pain experienced by the patients who underwent Limberg rhomboid flap was significantly low.

We considered total recovery time as time duration from admission in the hospital till the resumption of his/her duty. In our study, the total recovery time was noted to be significantly lower in patients who underwent Limberg flap technique was a mean of 10.5 days. So, patients who underwent Limberg rhomboid flap technique decreases longer hospital stay and it takes less time for recovery than open technique. 4 patients (20%) developed wound discharge and one patient had flap necrosis and revision, none of the patients had recurrence during follow up for 6 months.

In patients undergoing Limberg flap, our study shows no recurrence while western literature shows a recurrence rate of 4.18 %. This low recurrence rate may be due to the small sample size of our study. [10]

Conclusion:

In our study of 20 patients who presented with various presentations of pilonidal disease the following observations were made. Pilonidal disease is a disease of the natal cleft affecting young adults with a male preponderance. Among the two surgical techniques that were commonly done Limberg rhomboid flap technique takes longer time to perform but it has low complication rate, less duration of hospital stays, early return to work and less post-operative pain as compared to other technique. Hence Limberg rhomboid flap technique is the most effective surgery to treat pilonidal disease.

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