



Surgery

A COMPARATIVE STUDY OF RHOMBOID EXCISION AND LIMBERG FLAP WITH EXCISION AND PRIMARY CLOSURE IN CHRONIC PILONIDAL SINUS FROM A SOUTH INDIAN TERTIARY HOSPITAL.

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ABSTRACT **Introduction:** Pilonidal sinus is known to be a simple condition that refers to a tract or cavity that contains loose hair and is associated with repeated infection and abscess formation. Its incidence is higher in males than females and increase with obesity and hairy skin.

Aims and objectives: To compare the outcome of rhomboid excision with modified Limberg flap and excision and primary closure for the treatment chronic pilonidal sinus and to compare various postoperative parameters

Materials and methods: Comparative study done at Department of General surgery, Government Medical College, Kozhikode. Two groups – Each with 60 patients. All patients with chronic pilonidal sinus admitted through General Surgery OPD willing for the study & older than 18yrs were included. Patients with Type II diabetes mellitus, hypertension, coronary artery disease, history of previous surgery for pilonidal sinus.

Results: Literature has documented a recurrence rate of 0–3% for Limberg flap against a significantly high recurrence of 7–42% for primary closure. Outcome of our study in terms of recurrence of the sinus is the same as reported by other studies, namely, 18.3% recurrences for the primary closure group against 5% recurrence of the Limberg flap group which was significant ($p < 0.05$).

Conclusion: According to the results of our study, Limberg flap method has better to decrease recurrence and postoperative morbidity in compared to simple primary midline closure. Therefore, we recommend Limberg flap for treatment of pilonidal sinus disease.

KEYWORDS : Pilonidal Sinus , Limberg Flap.

Introduction:

Pilonidal sinus is known to be a simple condition that refers to a tract or cavity that contains loose hair and is associated with repeated infection and abscess formation. Its incidence is higher in males than females and increase with obesity and hairy skin.[11] It is more common in people age 15 to 30 years and incidence increases after puberty due to effects of sex hormones on pilosebaceous glands and change in healthy body hair growth. There are different surgical approaches for pilonidal sinus. [12]

- 1) Wide excision and healing by secondary intention
- 2) Excision and primary closure
- 3) Advancement flap – Karyadaki's flap
- 4) Rotational flap – Modified Limberg's flap

None of these procedures eliminate the postoperative morbidity including delay in wound healing, discomfort and high rates of recurrence ranging from 1 to 43%.

Aim:

To compare the outcome of rhomboid excision with modified Limberg flap and excision and primary closure for the treatment chronic pilonidal sinus.

Objectives:

- 1) To compare the rates of post operative infection
- 2) To compare the rates of post operative pain and oedema
- 3) To compare mean hospital stay in days
- 4) To compare rates of recurrence

METHODOLOGY:

Comparative study done at Department of General surgery, Government Medical College, Kozhikode. Two groups – Each with 60 patients. All patients with chronic pilonidal sinus admitted through General Surgery OPD willing for the study & older than 18yrs were included. Patients with Type II diabetes mellitus, hypertension, coronary artery disease, history of previous surgery for pilonidal sinus.

RESULTS AND DISCUSSION:

Literature has documented a recurrence rate of 0–3% [1] for Limberg flap against a significantly high recurrence of 7–42% [2] for primary closure. Outcome of our study in terms of recurrence of the sinus is the

same as reported by other studies, namely, 18.3% recurrences for the primary closure group against 5% recurrence of the Limberg flap group which was significant ($p < 0.05$). Fist, a drawback of follow-up of less than 1 year for documenting the recurrence mask such data of many of the studies since most of the recurrences present within 3 years of the primary procedure [3]. The financial burden in the surgical management of pilonidal sinus assumes more considered because the disease is mainly occurred in second and third decades of life. Mean age of Limberg Flap group was 32.92 years and in primary simple closure group it was 33 years and the difference was statistically insignificant ($p > 0.05$). Literature published a hospital stay of 1–5 days and 2–4 days for the primary simple closure and Limberg flap 57 techniques, respectively. In present study, we observed a total hospital stay of 2.77 ± 0.43 days and 2.30 ± 0.47 days for the primary midline closure group and the Limberg flap group, respectively. However substantial material has been published on the Limberg flap technique for pilonidal sinus, there is only few documentation of the operative period for the technique. The difference was found statistically highly significant ($p < 0.001$). Akca et al [4] have published a median operative period 60 min for the Limberg flap group against 45 min for the primary midline closure group and the difference has been found to have p value of 0.001. While Abu Galala et al [5] have found an insignificant difference in the operative time periods of the two techniques. Our study also documented a statistically non significant difference between operative time periods for the two procedures; a mean of 43.67 ± 9.32 (range 30–60) minutes for primary midline closure against 52.32 ± 2.73 (range 40–60) minutes for Limberg flap. Near similar values of these parameters (operative time and total hospital stay) for the two procedures should render them a less important factor in determining the superiority of one procedure over the other. So immediate postoperative complication range of the two procedures leads to the conclusion that wound collections (hematoma/seroma) tend to occur with Limberg flaps whereas suppurative wound infections, wound 58 disruptions, and tend to occur more with simple midline primary closure procedure. Published studies documented a wound infection rate and a wound disruption rate of up to 12.4% [5] and 5–10% [6] respectively, for the primary midline closure technique, while published values of such parameters for the Limberg flap group are 1.5–6.5% [7] and 0.9–3.9% [8] respectively. In keeping with the published literature, our study observed an immediate complication rate wound infections rate and wound disruptions rate 26.6% and 20% in primary simple closure respectively ($p < 0.05$) and wound infections

10% and disruption rate 3.3% in Limberg flap group. This difference was found statistically insignificant ($p>0.05$). From these above data, it is evident that a more morbid immediate postoperative complication has been encountered in the primary closure group than with the Limberg flap group. Does a postoperative indoor patient strategy prevent these complications? Data are still unavailable on the proportion of patients who would actually benefit from postoperative indoor strategy for preventing their immediate postoperative complications. Presumably, it seems that the proportion will be too less to be cost-effective for the procedure, keeping in view the overall immediate complication rates for the procedure and management protocols for such complications⁵³. 59 Main technical problem of PS surgery is not the removal of the cyst along with all of the sinuses, but rather reconstruction of the remaining defect area⁹. The reasons for the negative results of the primary closure method are the incision scar in the midline, the inability to flatten the natal cleft, and the tissue tension. A number of flap methods have been described that attempt to eliminate the factors that cause these negative results of primary closure, resulting in lower recurrence rates¹⁰.

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Table 1: Group Vs Surgical site infection

Group		Surgical site infection		Total
		Absent	Present	
Limberg flap repair	Count	54	6	60
	% within group	90.0%	10.0%	100.0%
	% within surgical site infection	55.1%	27.3%	50.0%
	% of Total	45.0%	5.0%	50.0%
Excision & primary repair	Count	44	16	60
	% within group	73.3%	26.7%	100.0%
	% within surgical site infection	44.9%	72.7%	50.0%
	% of Total	36.7%	13.3%	50.0%
Total	Count	98	22	120
	% within group	81.7%	18.3%	100.0%
	% within surgical site infection	100.0%	100.0%	100.0%
	% of Total	81.7%	18.3%	100.0%

Table 2: Group Vs Recurrence at 6 wks

Group		Recurrence at 6 wks		Total
		Absent	Present	
Limberg flap repair	Count	54	6	60
	% within group	90.0%	10.0%	100.0%
	% within recurrence at 6 wks	58.7%	21.4%	50.0%
	% of Total	45.0%	5.0%	
Excision & primary	Count	38	22	60
	% within group	63.3%	36.7%	100.0%
	% within recurrence repair at 6 wks	41.3%	78.6%	50.0%
	% of Total	31.7%	18.3%	50.0%
Total	Count	92	28	120
	% within group	76.7%	23.3%	100.0%
	% within recurrence at 6 wks	100.0%	100.0%	100.0%
	% of Total	76.7%	23.3%	100.0%

CONCLUSION

According to the results of our study, Limberg flap method has better to decrease recurrence and postoperative morbidity in compared to simple primary midline closure. Therefore, we recommend Limberg flap for treatment of pilonidal sinus disease.

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