

Partial Closure Technique After Pilonidal Sinus Excision: A Quick Healing Technique

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Abstract: Pilonidal sinus can present as acute abscess or chronic discharging sinus. Many surgical treatment options are available for pilonidal sinus ranging from simple excision to various types of flaps procedures. The present study was planned to know the comparative outcome of two methods of treatment of pilonidal sinus disease; first the open group and second the partial closure group. We concluded that partial closure technique for pilonidal sinus disease has short hospital stay, produces quick wound healing, minimum complications and low recurrence rate as compared to total lay open method.

Keywords: Pilonidal Sinus Disease, Sacrococcygeal sinus, Intergluteal sinus, Excision, Secondary Intention

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I. Introduction

The word pilonidal is derived from *Latin* which means nests of hairs.[1] The pilonidal sinus is a disease of natal cleft with a tract lined by epithelial cells mostly containing tuft of hairs situated in the sacrococcygeal region. The disease commonly affects hairy men in second and third decade. Obesity, drivers, sedentary occupation, sweating and trauma are the risk factors for development of pilonidal sinus disease.[2] Exact pathology of pilonidal sinus is still not clear. Clinically pilonidal sinus can present as acute abscess or chronic discharging sinus. Chronic pilonidal sinus disease should only be subjected to surgery. Many surgical treatment options are available for pilonidal sinus disease like excision, excision with vacuum assisted closure, midline closure, marsupialisation, off the midline closure using various types of flaps.[3] All these methods have complications, postoperative infection and recurrence. Of the various modalities available for treatment of pilonidal sinus disease no single method has been evolved as standard method.[4] This study was planned to know the comparative outcome of two methods of treatment of pilonidal sinus disease; first the open group and second the partial closure group.

II. Materials and Methods

The study was conducted on 30 patients admitted with pilonidal sinus disease in a surgical ward. Patients already operated and presenting with recurrence were excluded from the study. The patients suffering from pilonidal sinus were assigned group A and group B. In both groups all the patients underwent wide excision by an elliptical incision. In group A the wound was left open (open group) and in group B the residual wound was partially closed (partial closure group). The surgery was performed in prone position with buttocks apart under anaesthesia. A vertically elliptical incision was marked encircling all the external sinus openings (Fig 1 & 2). The tissue containing the sinus openings and the underlying tract was excised enbloc (Fig 3). This method of wide excision was done in all the patients of both groups. Complete hemostasis was achieved. In group A the residual wound was packed with Povidine Iodine solution soaked gauze and dressing done. In group B patients one stitch with polypropylene was applied on each side of elliptical incision to decrease the size of residual wound to half (Fig 4). The residual wound was packed with Povidine Iodine solution soaked gauze. All the patients were discharged on first postoperative day after removing the packed gauze. These patients were prescribed oral antibiotics and advised to get dressings with Povidine Iodine solution daily. Observations like operative time, duration of hospitalization, surgical complications, wound healing time, loss of work days and recurrence in follow up were recorded.

Figures



Fig 1: Pilonidal Sinus



Fig 2: Marking the planned excision of Pilonidal Sinus



Fig 3: Enblock excision of tissue containing Pilonidal Sinus



Fig 4: Partial closure of residual wound

III. Results

Table 1: Comparative Results in GROUP A and GROUP B

Sr no	Observation	Group A (n=20) OPEN GROUP	Group B (n=20) SEMICLOSED GROUP
		Early	
1	Operative Time	10-20 minutes (15±5)	16-24 minutes (16±4)
2	Hospitalization Time	18-23 hours	4-6 hours
3	Secondary Haemorrhage	2 patients	0 patients
4	Infection	3 patients	0 patients
5	Pain	5 patients	1 patient
		Late	
6	Complete Healing Time	30-60 days	14-30 days
7	Surgical Debridement required	1 patient	0 patient
8	Hypergranulation	4 patients	0 patients
9	Cosmetic Result	Not acceptable to patient	Acceptable to patient
10	Recurrence	3 patients	0 patients

The results were excellent in this semiclosed technique as compared to open healing technique. The results are compared between two groups and are depicted in TABLE I.

IV. Discussion

The incidence of pilonidal sinus is 26 per 100,000 people; males are affected more commonly than females.[5] These sacrococcygeal pilonidal sinus are discharging pus and are painful making the patient repeatedly absent from work. Although many surgical options are available for treatment of sacrococcygeal pilonidal sinus disease but choice of surgery depends on the choice of surgeons. Surgeon's choice depends on his experience and availability of resources. The chosen surgical procedure should eradicate the disease, minimum hospitalization, early healing, no recurrence and acceptable cosmetic results. This comparative study compares the results of open healing and semi closure technique. In a study of 64 patients of sacral pilonidal sinus operated by two surgical techniques of Tie-over and closed suction drainage for closure of wound. Significant difference was observed in term of patient satisfaction in different age groups. The level of satisfaction in tie-over group was statistically significant as compared to closed suction drainage group (p value = 0.035).[6] Wounds' healing is definitely faster after primary closure of the wound as compared to the open healing. Also the return to work is sooner in case of former but the type of surgery chosen is the surgeon and patient preference. But primary closure has a definite increased risk of sinus recurrence. [Macullum bmj] They recommended off midline closure procedure if primary closure is the desired option.[7] Garg P et al did lay open

(deroofing) with curettage procedure under local anaesthesia as a day care procedure pilonidal sinus and abscess and achieved a cure up to 97%. They stated that this procedure has the potential of becoming the first line procedure for treatment of pilonidal sinus disease as it does not require admission and is associated with minimum morbidity and scarring.[8] Al-khamis A et al did an analysis of Cochrane Database to compare open method with closed surgical treatment for pilonidal sinus on outcome of healing time, infection and recurrence rate. In this analysis 7 studies compared open wound healing with surgical closure with result that healing time was less after surgical closure as compared to open healing. There was no difference in surgical site infection rate in both groups. The recurrence rate was less in open healing than with primary closure. They concluded that no benefit was achieved for open healing as compared to primary closure procedures.[9] Rashidian et al compared three surgical modalities for treatment of pilonidal sinus in 60 patients. Wide excision of the pilonidal sinus and tracts was done in all the patients. In first group the surgical wound was left open, in second group simple primary closure of the wound was done and in third group a rhomboid flap was used to repair the defect. There was no difference in postoperative hospitalization time between lay open group, simple primary closure group and rhomboid flap group. The period of absence from work was much shorter in simple primary closure and rhomboid flap closure as compared to lay open group. Complications like postoperative infection and haemorrhage were more common in lay open group than other two groups. In 18 months follow up recurrence rate was about 5% in lay open group with no recurrence in other two groups.[10]

Gencomanoglu et al compared modified lay open technique with primary closure following excision with respect to operating time, healing time, absence from work, morbidity and recurrence rate. In this study of 142 patients of sacrococcygeal pilonidal sinus, random allocation was done as group A and group B. In group A containing 73 patients the procedure of incision, curettage, partial lateral wall excision and marsupialisation was done. In group B containing 69 patients the primary closure of the wound was done. This study concluded that modified lay open technique is superior to excision with primary closure for the treatment of pilonidal sinus disease in time to return to work, morbidity and recurrence rate except healing time is longer with this technique.[11] In a review various options for the treatment of pilonidal sinus are described. Conservative treatment, drainage with or without curettage, lay open of track, limited excision, wide excision and open drainage, wide excision and primary closure are the techniques described. Plenty of studies related to these methods are available pointing that none of the method is universally acceptable. Recurrence rates are variable depending on the technique and choice of technique depends on surgeon's preference and perception related to familiarity of the technique and low recurrence rate.[12] Kaser SA et al compared primary wound closure with Limberg flap (group L) with excision and secondary wound healing (group E) in a study of 102 patients. The operative time half 30 minutes in excision group compared to Limberg flap. There was no significant difference in other parameters like postoperative pain, analgesic intake, loss of work days and satisfaction rate. The complication rate was 49% in group L compared to 12% in group E. The recurrent disease occurred 13% in group L and 6% in group E. They concluded primary wound closure with Limberg flap has no advantage over secondary wound healing because of high complication rate in former group.[13]

In this study early wound healing was observed in partial closure group so healing time was much shorter in the group B as compared to group A. As the healing time is less in group B the duration of absence from work is much shorter in group A. Similarly complications like infection and haemorrhage were much lower in group B in comparison to group A patients. The partial closure technique used in group B produces better cosmetic results than open technique group A. If open method is surgeon's preference than partial closure technique of wound is a more promising technique as compared to open healing technique.

V. Conclusion

In summary this partial closure technique for pilonidal sinus disease has short hospital stay produces quick wound healing, minimum complications and low recurrence rate as compared to total lay open method. This partial closure technique produces good cosmetic result which is well accepted by patients. This procedure also produces a partial cleft lift producing low recurrence rate as compared to total open method.

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