Comparative Study for Treatment of Sacrococcygeal Pilonidal Sinus with Simple Wide Excision Versus Limberg Flap

MAHBOOB ALAM, NASIM AFZAL TARAR, BILAL AFZAL TARAR, MAHMOOD ALAM

ABSTRACT

Background: Pilonidal sinus is common in various professions and cumbersome for day to day working. Recurrence after the treatment is commonly noted in various treatment modalities. Therefore various methods for treatment are being practiced for the management of this ailment. In view of this, recent addition of rhomboid excision and Limberg flap repair as feasible procedure for treatment of pilonidal sinus disease is a good option. Therefore, our aim is to evaluate the role of rhomboid excision of the pilonidal sinus with Limberg flap by comparing this procedure with the traditional excision and secondary healing.

Methods: This prospective study recruited 30 patients with sacrococcygeal pilonidal sinus. The patients were randomly divided into two equal groups. Rhomboid excision of the sinus with Limberg flap was performed in 15 patients (group A) and excision of the sinus with secondary healing was offered to other 15 cases (group B). Demographic data and surgical outcome were compared between both groups.

Results: Group A showed significant early return to work and significant less postoperative pain than group B. Similarly, incidence of wound dehiscence, postoperative hematoma, seroma and post-operative infection was less among group A. Wound healing with group B patients with open wound takes long time to heal with lot of discomfort for the patient even for many days.

Conclusion: Rhomboid excision and Limberg flap repair is an advantageous and effective modality than simple excision with secondary healing in treatment of sacrococcygeal disease. In addition, it is safe and easy procedure; it may prove to be an ideal treatment option in management of pilonidal sinus today and in the days to come.

Keywords: Limberg flap, sacrococcygeal pilonidal sinus

INTRODUCTION

Sacrococcygeal pilonidal sinus is a chronic condition which is usually noted in males. Young adults with specific professions are the main victims of this ailment. This may be acquired or congenital but it may be more common with acquired conditions. Patients usually present with localized pain, discharge and episodes of abscess formation. Due to recurrent nature of the disease many procedures are in vague. There is no gold standard procedure being in practice till now. Various procedures are excision with primary closure, excision and marsupialization and excision with flap rotation are being practiced. Various modifications of this procedure such as rhomboid, y y advancement and Z placement have been in use. Every procedure is leaving behind various set of complications. Recurrence is the main complication, others are infection with wound dehiscence and post operative pain.

Our aim in this study is to evaluate the role of wide excision with secondary healing and excision with Limberg flap.

METHODS

This prospective study was carried out at Avicenna Hospital from May 2017 to January 2018. Thirty patients with primary sacrococcygeal pilonidal sinus subjected to two different treatment modalities. Group A with 15 patients had excision and rhomboid flap and second group B consisted of 15 patients whom underwent wide excision and healing with secondary intention. All included patients were consented. Patients were excluded from this study, having systemic disease affecting wound healing, presence of acute inflammation or associated with abscess formation.

All patients were admitted to hospital the day before operation. The intergluteal area was shaved before surgery. Prophylactic parenteral broad-spectrum antibiotics were given at the time of induction of anesthesia (Ceftriaxone,1 gram I.V). Patients were operated under spinal or general anesthesia. The patients were placed in prone position with lateral traction of the buttocks with wide adhesive tapes. Appropriate sterilization of the surgical area with povidone–iodine solution was performed. Delineation of the course of the sinus was helped by injection of methylene blue (1-3cm) or introduction of blunt probe to avoid missing of excision of any side tracks.

In group A, rhomboid-shaped incision was made around the sinus which was equal in length on each side from the mouth of the sinus. The excision was at least 1cm away from the sinus. Rhomboid fascio-cutaneous flap was divided and mobilized from the underlying gluteus muscle. The flap was sutured without tension in 2 layers (subcutaneous fat with 3/0 polygalactin and closure of the skin with prolene 2/0). Suction drain was put behind the flap and removed on the fifth to seventh postoperative day. The skin stitches were removed on the 14th postop day.

In the case of wound infection or hematoma, the wound was drained by removal of few sutures with regular daily dressing and covered with broad spectrum antibiotics. In group B, vertical elliptical incision around the sinus was done extending to the presacral fascia. The incision was deepened extending to the presacral fascia. After making sure of good hemostasis, wound was packed with polyfex and povidone–iodine soaked gauze pieces.

Department of Surgery, Avicenna Medical College, Lahore Correspondence to Dr. Mahboob Alam, Assistant Professor Email: drmahboobalamchishti@gmail.com Cell: 0333-4461610
Follow up was done to all patients as per performa up to three months in regular outpatient's visits. Operative work was completed within six months. We used student's t test to verify the comparative study between both groups and p <0.05 was considered statistically significant.

RESULTS

The study included 30 patients with primary sacrococcygeal pilonidal sinus. These cases were randomly divided into two equal groups. Excision of the sinus with rhomboid skin incision and Limberg flap was applied in group A patients. In Group B patient's sinus excision and wound left for secondary healing. Demographic data and postoperative complications were noted in both groups as shown in (Table 1). The main symptoms were pain and intermittent discharge in both groups and recurrence.

Table 1: Demographic data and postoperative complications in both groups

<table>
<thead>
<tr>
<th>Complications</th>
<th>Group A</th>
<th>Group B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mild</td>
<td>Moderate</td>
</tr>
<tr>
<td>Pain</td>
<td>02</td>
<td>02</td>
</tr>
<tr>
<td>Bleeding</td>
<td>01</td>
<td>01</td>
</tr>
<tr>
<td>Wound Infection</td>
<td>01</td>
<td>00</td>
</tr>
<tr>
<td>Recurrence</td>
<td>00</td>
<td>00</td>
</tr>
</tbody>
</table>

Table 2

<table>
<thead>
<tr>
<th></th>
<th>Group A</th>
<th>Group B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of patients</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Age in year (mean±SD)</td>
<td>18-40 years (27.4±6.2)</td>
<td>20-45 years (29.2±8.4)</td>
</tr>
<tr>
<td>Gender (M/F)</td>
<td>13/2</td>
<td>14/1</td>
</tr>
</tbody>
</table>

DISCUSSION

Pilonidal sinus consists of a symptom complex with clinical presentations ranging from asymptomatic pits to painful draining lesions7,11. Sacrococcygeal pilonidal disease is a common disabling condition. Predominantly it is noted in young people. Male are affected more in numbers than females as per Table 1. This was consistent with other many studies1,12,19,20,24. People with professions like driving and people having prolonged sitting are predominantly suffering from this ailment. Due to excessive pressure hairs are penetrated in to the subcutaneous tissues leading to abscess formation. These patients have discharge & uncomfortable wetting of undergarments due to off and on pressure. Additionally, the main complaint of four patients was pain, intermittent discharge and intermittent abscess formation. This was in agreement with other related studies11,7,19,21. This sort of problem is embarrassing for the normal working in the society. No method of treatment is real answer for this but few successful surgical procedures are now available to reduce its recurrence which is the major complication resulting in considerable morbidity and loss of work days11. Successful surgical treatment of pilonidal disease requires wide excision of the sinus and underlying hair nests21. Consequently, a full basket of surgical techniques varied from simple curettage to extensive flap techniques have been published. The ideal procedure to eradicate the disease should eliminate the natal cleft so as to take off the anatomical predisposition for the recurrence of the sinus23. Skinflap to cover sacral defect after wide excision have been described & rhomboid flap technique involves creation of a flap to facilitate primary closure and to obliterate the deep natal cleft. Initially, the rhomboid flap procedure was indicated for complex and recurrent cases, but now it has been recommended as a first line management of chronic sacrococcygeal pilonidal sinus6,16.

In the present study, we managed 15 patients with wide surgical excision and closure of the defect with rhomboid flap. The surgical outcome was evaluated by comparing this flap procedure with a similar number of patients undergoing traditional method of surgical excision and secondary healing. The operative time among the flap group (group A) is more than simple excision group (group B).

This timing is parallel with other similar studies5,20,24. However, group (A) showed significant statistical difference in comparison with group B as regards; time to walk without pain, and time to return to work. The results in this study agree with other related comparative studies12,19,25 (Table 2).

Furthermore, the early postoperative surgical outcome of our patients showed that the reported incidence of wound infection, wound dehiscence and formation of subcutaneous hematoma were less among the flap group in comparison with the other group. Many other current studies documented similar reported results12,23,24,25. Great number of studies used vacuum drains after rhomboid flap to abolish the dead space and to prevent complications such as hematoma, seroma and recurrence11,20,24,25. In our study we used suction drains in group A which is in line with other studies (Table 2).

On the other hand, smaller number of studies reported that there was no significant difference between the use of drains or not on the surgical outcome6,21. The main causes of recurrence after surgical management of pilonidal sinus disease are the possible results of incomplete resection, postoperative dead space, excessive flap tension. Few more causes are chronic inflammation, trauma and the nature of body hairs and skin. Midline incision and deep intergluteal sulcus could particularly cause to the poor results22,23.

Early postoperative complications were noted within two weeks of surgery such as seroma, haematoma, abscess and sinus formation. Late complication was recurrence noted within 3 months and 6 months after surgery. Recurrence was noted in one patient in group A.
patients and two in the group B patients with wide open excision.

During the follow up period, our results showed that recurrence occurred in one patient only in the flap group (3.3%) and two patients in group B. These recorded results were close to the incidence of recurrence of other similar related studies12,14,19,20,21.

CONCLUSION
Rhomboid excision and Limberg flap repair is an advantageous and effective modality than simple excision with secondary healing in treatment of sacrococcygeal pilonidal disease. In addition, it is safe and easy procedure. It may be an ideal treatment option in management of pilonidal sinus.

REFERENCES