Original Research Article

Retrospective analysis of 30 cases of pilonidal sinus by various techniques of conservative and surgical management and review of literature

Sangram Karandikar¹*, Narendra G. Naik²

¹Department of Surgery, Arihant Hospital, Nerul, Navi Mumbai, Maharashtra, India
²Department of Surgery, Nachiket Clinic, New Panvel (E), Mumbai, Maharashtra, India

Received: 16 August 2016
Revised: 27 September 2016
Accepted: 20 October 2016

*Correspondence:
Dr. Sangram Karandikar,
E-mail: sangkaran@hotmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: The pilonidal sinus disease may present as chronic cutaneous infection, pilonidal abscess, pilonidal sinus or recurrent pilonidal sinuses. There are several conservative non-surgical and surgical methods of treatment of pilonidal sinus. The wound healing of pilonidal sinus depends upon multiple factors such as the stage at which patient presented to the surgeon, co-existing medical conditions, method of medical/surgical treatment chosen and the expertise of the surgeon. Here we are presenting the retrospective analysis of 30 cases of pilonidal disease, in view of different modalities of treatment, challenges faced, post-operative results and hospital stay.

Methods: Over a period of 7 years, 30 patients suffering from various stages of pilonidal sinus disease were treated by conservative and surgical methods. The choice of treatment modality offered to each patient was individualized based on the stage and severity at the time of presentation. The patients were followed up to assess recurrence for 1 year after complete healing of the pilonidal sinus.

Results: All patients with pilonidal sinus/ ulcer < 5 mm showed complete healing without recurrence with conservative line of management. There was recurrence of sinus in 80 % patients treated with only Incision and Drainage for pilonidal sinus abscess. The patients with large sinus (> 5 mm ulcer or skin involvement), were treated by excision with healing by secondary intension. This group of patients was associated with recurrence in 80% cases. The remaining patients with large pilonidal sinus disease were treated by the newer technique of semi-closed method with drain. In this group, only 20% patients developed recurrent sinus. All patients with recurrences healed after either conservative method or surgical method involving local skin flap.

Conclusions: The conservative method of treatment is suitable for early and superficial pilonidal sinuses. For chronic and extensive pilonidal sinus disease, surgical treatment with the newer technique of semi-closed method with drain was found to reduce the rate of recurrence. The cases with superficial recurrent pilonidal sinuses may heal with conservative approach and extensive recurrent lesions require reconstruction with local skin flap. The results of the newer technique of semi-closed method with drain were found to be comparable with that of surgery by excision with primary closer. These results may be further evaluated at high volume centre for practical statistical significance regarding choice of treatment.

Keywords: FLAPS for pilonidal sinus, Pilonidal sinus, Pilonidal abscess, Pilonidal sinus disease, Recurrent pilonidal sinus, Semi-closed technique with drain
INTRODUCTION

The pilonidal sinus disease (PSD) is a frequently encountered problem in clinical practice (Figure 1 and 2). It affects males more commonly as compared to females due to presence of excess body hair. Heredity and number of baths taken per week have been found to be additional risk factors for development of PSD. It affects the skin at the lower back, especially the natal cleft. Due to erect body posture in sitting and standing position, the broken body hair tends to accumulate in the midline in the natal cleft.

We are presenting a retrospective analysis of 30 cases of pilonidal sinus disease treated at different stages of the disease. The study reveals the success rate of different treatment modalities, the difficulties in the treatment, the need for hospital stay and the outcomes of surgical treatment.

METHODS

From January 2007 to December 2015, we treated 34 patients with pilonidal sinus disease. Out of these, 4 patients were excluded from the study in view of noncompliance to the given treatment and inability to follow up for minimum period of one year. So we are presenting retrospective analysis of 30 patients of pilonidal sinus (Table 1) treated over a period of 9 years from year 2007 to 2015.

The patients have been evaluated in view of recurrence, cosmetic result, hospital stay, time to heal the wound and time taken to return to work. After complete healing of the wound, all 30 patients were followed up for a period of one year to analyse the outcome of the treatment.

Table 1: Distribution of cases with pilonidal sinus disease.

<table>
<thead>
<tr>
<th>No. of patients</th>
<th>Diagnosis</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A</td>
<td>5 Pilonidal sinus</td>
<td>Sinus / ulcer size &lt; 5 mm</td>
</tr>
<tr>
<td>Group B</td>
<td>5 Pilonidal sinus with abscess</td>
<td>Presence of abscess</td>
</tr>
<tr>
<td>Group C</td>
<td>20 Pilonidal Sinus</td>
<td>Sinus / ulcer size &gt; 5 mm</td>
</tr>
</tbody>
</table>

RESULTS

Five patients in Group A presented at an earlier stage with history of burning sensation and pain in the natal cleft with small ulcer of size ≤ 0.5 cm with hairy back. These patients were advised to maintain good personal hygiene by taking bath daily and removal of hair in perianal and natal cleft area at regular intervals. They were prescribed oral broad spectrum antibiotics. The patients were advised to keep the affected area dry and asked to avoid any ointment application to the ulcer. The ulcers of all the 5 patients healed within a period of two weeks without any signs of recurrence in the follow up period of 1 year.

Pilonidal sinus with abscess was found in 5 cases (Group B) and they were treated by incision and drainage of abscess. The patients were hospitalized for a week for parenteral antibiotics and relief from pain. Out of these 5 patients, the wound of only 1 patient healed completely over a period of 3 weeks without any evidence of recurrence on a follow up period of one year. In rest of the 4 cases, wound reduced in size leaving behind a residual discharging sinus tract (Figure 3).
The remaining 20 cases of chronic pilonidal sinus (Group C) were selected for following surgical treatment after excision of the pilonidal sinus:

- Group C1: The wound allowed to heal by secondary intention (10 cases) (Figure 4).
- Group C2: The newer semi-closed technique with drain (10 cases) (Figure 5).

In Group C1, after the excision of the sinus tract (10 cases), the wound was allowed to heal by secondary intention. Daily dressing of the wound was done with irrigation with povidone iodine solution and dressing with povidone iodine ointment. The patients were hospitalized for a week. Out of these 10 cases, 8 cases showed signs of recurrence of the disease. In 2 cases, the wound healed completely in 3 weeks without any recurrence in the follow up and patients resumed their work from fourth week.

As the discharge from the wound reduced, the tube drain was removed on 4th or 5th postoperative day. These patients were hospitalized for 1 week. Out of these 10 cases, the wound of 8 cases healed over a period of 2 week without recurrence during the following 1 year. Residual non-healing ulcer of approximately 3 cm was found in 2 patients. The surgical option of primary closure with flap reconstruction was considered only for recurrent pilonidal sinus cases in view of extensive postoperative scar (Figure 6).
As seen in Table 2, fourteen patients developed recurrence following initial surgical treatment for PSD.

Figure 7: Excision followed by primary closure with gluteus maximus musculo-cutaneous flap.

These 14 patients with recurrent pilonidal sinus were managed by following methods:

<table>
<thead>
<tr>
<th>Group and number of cases</th>
<th>Description of cases</th>
<th>Treatment modalities</th>
<th>Hospital stay</th>
<th>Healing time</th>
<th>Number of recurrent cases and percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A (5) Pilonidal sinus</td>
<td>Open dressing and local hygiene</td>
<td>Nil</td>
<td>2 weeks</td>
<td>Nil</td>
<td></td>
</tr>
<tr>
<td>Group B (5) Pilonidal abscess</td>
<td>Incision and drainage</td>
<td>7 days</td>
<td>3 weeks</td>
<td>4/5 (80 %)</td>
<td></td>
</tr>
<tr>
<td>Group C1 (10) Pilonidal sinus</td>
<td>Excision with healing by secondary intention</td>
<td>7 days</td>
<td>3 weeks</td>
<td>8/10 (80 %)</td>
<td></td>
</tr>
<tr>
<td>Group C2 (10) Pilonidal sinus</td>
<td>Newer technique of semi-closed method with drain</td>
<td>7 days</td>
<td>2 weeks</td>
<td>2/10 (20 %)</td>
<td></td>
</tr>
</tbody>
</table>

DISCUSSION

Pilonidal sinus occurs in the natal cleft and can cause discomfort, embarrassment and absence from work for the affected young population (mostly men). The definitive operation may be performed using a closed, semi-closed and open technique. However, surgical management of recurrent disease is more controversial. Numerous studies have justified use of one technique over another.¹ Chronic pilonidal disease is the term applied when patients have undergone at least one pilonidal abscess drainage procedure and continues to have a pilonidal sinus tract. The term also refers to a pilonidal sinus that is associated with chronic discharge without an acute abscess. After excision and during healing by secondary intention, patients undergo multiple dressings with gauze pack (almost daily) leading to poor quality of life. The advantages of a primary closure are smaller wounds, a shorter healing time (usually ≤3 weeks), minimal wound care, earlier return to work, and no need for daily scheduled dressing changes. The obvious disadvantages are wound infection and wound dehiscence.

The treatment of recurrent and extensive PSD is challenging. The ideal treatment should be associated with short hospital stay, minimal complication rates, and the least rate of recurrence. Wound healing by Secondary intention after excision of large sinuses results in a chronic wound that requires dressing changes for a long time. The condition also negatively affects the patient's social life. With the progress of reconstructive techniques, the lowest recurrence rates have been reported after primary closure using local flap.³ In a study by Rashidian N et al, simple closure or use of rhomboid flap was found to give acceptable cosmetic outcome.³ In selected patients, V-Y advancement flaps provide tension-free repair with minimal recurrence rates and
reliable skin coverage. Because patient dissatisfaction with cosmetic results is high, potential treatment outcomes should be discussed with patients in detail before the operation.\(^5\)

The postoperative results of superior gluteal artery perforator flap are better than any other surgical modality of treatment and Random pattern flap.\(^6,7\) This technique of flap reconstruction has been found to heal the large defects well in patients with extensive recurrent sacroccygeal pilonidal sinus with large defects.

The surgical treatment of excision with semi-closed technique may be considered an alternative option for the management of recurrent PSD. The advantages of this procedure are low complication rate, relatively short healing time and absence of recurrence.\(^1\) Here we have advocated a new modified semi-closed technique with a drain (infant feeding tube) for treatment of pilonidal sinus. The semi-closed technique helps in reducing the size of the wound defect and the drain helps in wound irrigation and drainage of sero-sanguinous discharge from the wound.

**CONCLUSION**

The treatment of PSD is time consuming and it is associated with significant morbidity due to alteration in patient’s lifestyle. Due to the lengthy treatment, patients require prolonged hospital stay and period away from work. The conservative treatment is preferred for pilonidal sinuses with superficial small ulcer in early stage. For chronic and large pilonidal sinus disease, surgical modality is preferred. As compared to incision and drainage and excision of the sinus tract, primary surgical closure yields better outcome. Primary surgical closure is associated with lesser incidence of recurrence. The recurrence rate of newer semi-closed technique with drain is comparable with recurrence rate of primary surgical closure. Hence, the newer technique of semi-closed method with drain can be used as alternative to primary surgical closure with excision. The newer semi-closed technique is easy to perform by any General surgeon. Further trials are needed at high volume centre for assessment of statistically significant benefits about healing rate, recurrence rates, hospital stay and overall reduced morbidity.

**Funding:** No funding sources

**Conflict of interest:** None declared

**Ethical approval:** The study was approved by the institutional ethics committee

**REFERENCES**


Cite this article as: Karandikar S, Naik NG. Retrospective analysis of 30 cases of pilonidal sinus by various techniques of conservative and surgical management and review of literature. Int Surg J 2017;4:291-5.