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Original Research Article

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

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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.[1] Heredity and number of baths taken per week have been found to be additional risk factors for development of PSD.[2] 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.

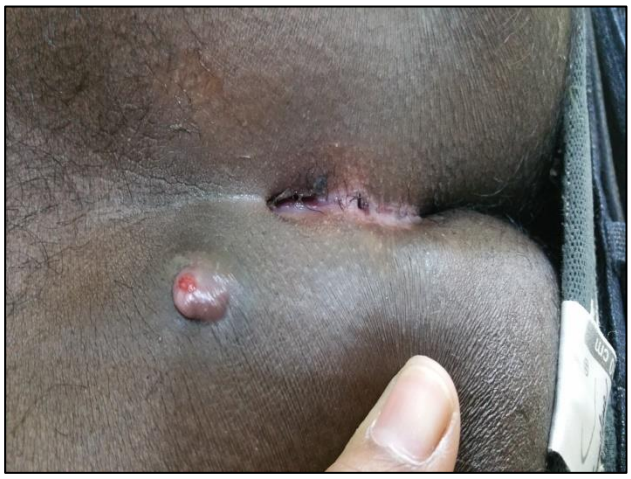

Figure 1: Typical site and appearance of the pilonidal sinus in sacral region, skin involvement > 5 mm.

Figure 2: Pilonidal sinus at earlier stage with skin involvement < 5 mm.

The hair punctures the skin and leads to chronic cutaneous infection. The patient may develop multiple sinuses with subcutaneous infection in the natal cleft. Sometimes an abscess is formed which may require surgical drainage. There are several described methods for surgical treatment of PSD. The surgical treatment option has to be individualized for each patient depending on the severity of symptoms, stage at presentation and presence of co-morbidities.

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.

	No. of patients	Diagnosis	Criteria
Group A	5	Pilonidal sinus	Sinus / ulcer size < 5 mm
Group B	5	Pilonidal sinus with abscess	Presence of abscess
Group C	20	Pilonidal Sinus	Sinus / ulcer size > 5 mm

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 peri-anal 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 week 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).

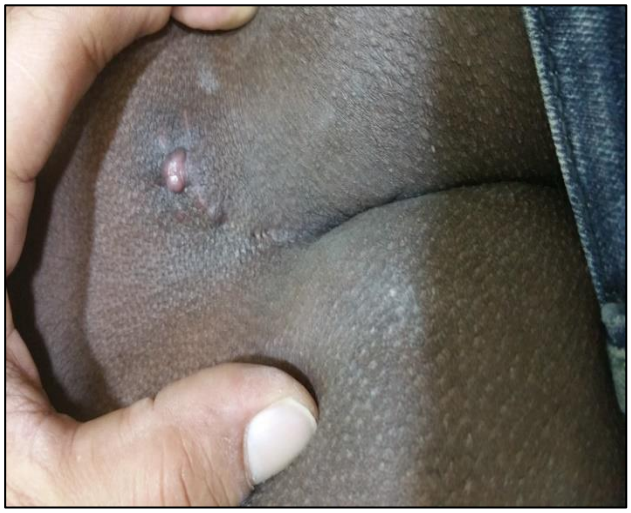

Figure 3: Chronic discharging sinus after incision and drainage for abscess.

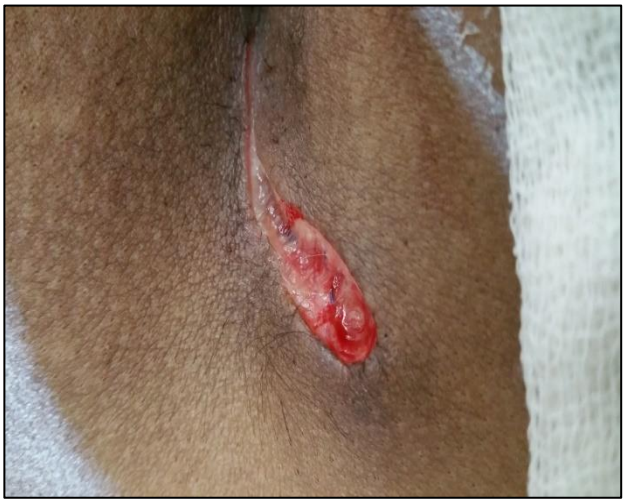

Figure 4: Excision followed by wound allowed to heal by secondary intention.

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.

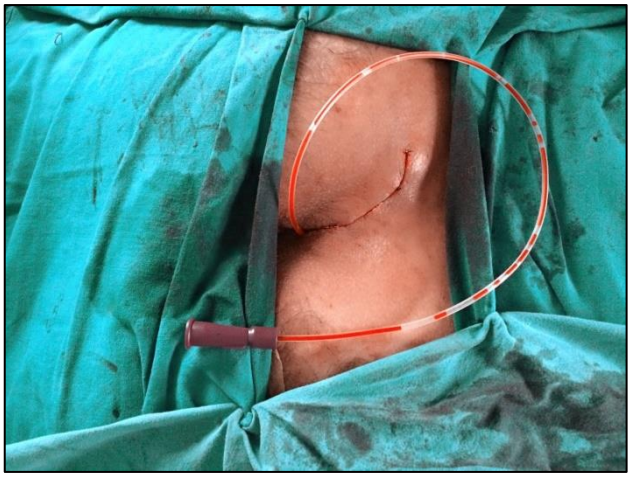

Figure 5: Newer semi-closed technique with drain.

The remaining ten cases of Group C2 were treated by newer semi-closed technique with drain (Figure 5). Complete excision of the pilonidal sinus tract was followed by few sub-cutaneous sutures using absorbable material and placement of a drain. The cut edges of the wound were brought nearer to reduce the size of the defect. A tube drain (infant feeding tube) was placed to give regular wound wash and drain out the collected secretion.

Figure 6: Extensive post-operative scarring after excision and reconstruction with flap.

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:

- Three cases were operated by gluteus maximus musculo-cutaneous flap (Figure 7) for large wound defects after excision of multiple recurrent pilonidal sinuses extending till sacro-coccygeal bone. The patients were hospitalized for 15 days and their wound healed completely during this period of hospitalization. All 3 cases operated by gluteus maximus musculo-cutaneous flap recovered completely without any incidence of recurrence.
- Nine patients with recurrent pilonidal sinus cases were operated by V-Y plasty and were admitted for 15 days. Out of these 9 cases, the wound healed completely in 7 patients without any signs of recurrence and 2 cases developed residual 2 cm non-healing ulcer.
- 2 patients with recurrence from Group C2 and 2 patients with recurrence after V-Y plasty (total 4), had recurrence showing residual non-healing ulcer of size 2 to 3 cm with cavity of 1 cm in depth. The bone in sacro-coccygeal region was not exposed. These were treated by collagen granules. All these patients showed signs of complete wound healing by secondary intention over a period of 4 weeks without any recurrence.

Table 2: Diagnosis, treatment modality and peri-operative observations.

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

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.[4] 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 sacro-coccygeal 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.

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REFERENCES

1. Sorour MA. Assessment of the semiclosed technique in the management of recurrent pilonidal sinus. Bull Alex Fac Med. 2009;45(3):547-51.
2. Yildiz T, Elmas B, Yucak A, Turgut HT, Ilce Z. Risk factors for pilonidal sinus disease in teenagers. Indian J Pediatr. 2016.
3. Başterzi Y, Canbaz H, Aksoy A. Reconstruction of extensive pilonidal sinus defects with the use of S-GAP flaps. Ann Plast Surg. 2008;61(2):197-200.
4. Rashidian N, Ardakani VJ, Wadji BM, Keramati MR, Saraee A, Ansari K, Adman AA. How to repair the surgical defect after excision of sacrococcygeal pilonidal sinus: a dilemma. J Wound Care. 2014;23(12):630-3.
5. Eryilmaz R, Okan I, Coskun A, Bas G, Sahin M. Surgical treatment of complicated pilonidal sinus with a fasciocutaneous V-Y advancement flap. Dis Colon Rectum. 2009;52(12):2036-40.
6. Acartürk TO, Parsak CK, Sakman G, Demircan O. Superior gluteal artery perforator flap in the reconstruction of pilonidal sinus. J Plast Reconstr Aesthet Surg. 2010;63(1):133-9.
7. Efron JE. Prospective evaluation of a single-sided innervated gluteal artery perforator flap for reconstruction of extensive and recurrent pilonidal sinus disease: functional, aesthetic, and patient-reported long-term outcomes. World J Surg. 2012;36(9):2237-8.

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