

Original Article

Assessment of various surgical methods in the management of Pilonidal disease

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Abstract:

Introduction: Postoperative wound complications have always been the main cause of concern followed by the risk of recurrence, in the surgical treatment of the pilonidal sinus disease. The present study was undertaken to compare commonly used surgical procedures in pilonidal disease and to evaluate complications following the procedure. **Material and Methods:** The present prospective study was conducted over 60 patients divided into 4 groups according to treatment procedure that consisted of wound primarily closed, marsupialization (partially closed wound), secondary healing (left open wound) and patients treated with Limberg flap transposition. Postoperative follow-up of all patients were done and any complications if present were noted. **Results:** Wound infection was the most common complication in case of secondary healing (left open wound) and marsupialization. Wound dehiscence was most common complication in case of primary closure group. Recurrence rate was 15% after surgical procedures with highest recurrence in closed wounds and least in Limberg flap. **Conclusion:** The present study reported that Limberg flap method resulted in higher postoperative complications and lower recurrence rate, while primary closure resulted in a higher recurrence rate.

Keywords: Pilonidal disease; Limberg flap; Marsupialization

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Introduction

Pilonidal disease is a common disease of the adult age group, especially male population with estimated incidence of 26 per 1,00,000 people. It presents as a cyst, abscess or sinus tracts with or without discharge. It is essentially a natal cleft or cleavage between the buttocks and is diagnosed as by identifying the epithelialized follicle opening (i.e., sinus).¹

Total excision of the involved sinus tract to the post sacral fascia is the most frequently applied surgical option. The defect formed on the excised area might be primarily closed, partially closed as is the case in marsupialization, left open for secondary healing, or reconstructed by differing flap techniques.² The previous available data compares various surgical procedure for treatment of pilonidal disease, however, postoperative complication has been reported. In view

of this present study was undertaken to compare commonly used surgical procedures in pilonidal disease and to evaluate complications following the procedure.

Material and Methods

The present prospective study was conducted over 60 patients randomly selected who reported for the treatment of pilonidal disease. Ethical approval was taken from the concerned institutional committee for the commencement of study. Informed consent was taken from the patients. Detailed clinical and medical history was obtained. Diagnosis was confirmed in patients and surgery was planned. Patients were divided into 4 groups according to treatment procedure that includes wound primarily closed, marsupialization (partially closed wound), secondary

healing (left open wound) and patients treated with Limberg flap transposition. Operative area was prepared and prophylactic antibiotic was administered intravenously preoperatively in each patient. Procedures were performed under spinal anesthesia with the patient placed in prone position with buttocks retracted apart. Elliptical incision was given to excise sinus tracts and electrocautery was used for dissection and to achieve hemostasis. The wound was partially closed by suturing the wound edges in patients undergoing marsupialization, completely closed in primary closure, and left open in secondary healing. In patients treated with Limberg flap transposition the skin was marked with a marker pen and rhomboid excision was given to excise the involved area. Then flap consisting of skin, subcutaneous fat and the fascia overlying gluteus maximus was raised to cover the rhomboid defect. A suction drain was placed under the flap. Postoperative analgesia was achieved by oral administration. Antibiotics were given for 7 days initially intravenously, then orally, suction drain was removed after 2 days, sutures removed around 10th day. The patient was advised not to put pressure on the flap for 3 weeks. Daily wound care was performed for each individual. Postoperative follow-up of all patients

were done and any complications if present were noted.

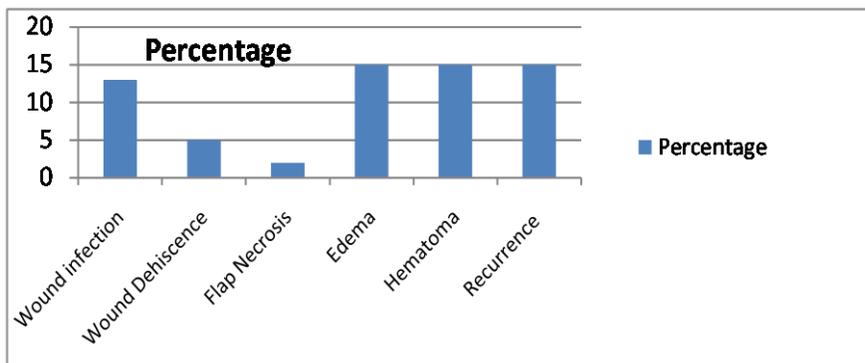
Data obtained was evaluated using SPSS-16 and was reported as numerical and percentage values as required.

Results

The present case consisted of 47 males and 13 females with a mean age of 28±2.1 years. Table 1 shows complications according to surgical procedures. In patients who underwent Marsupialization, wound infection was reported in 2 cases, hematoma in 1 and recurrence was found in 1 case. In patients in which wound was completely closed by primary closure, wound infection was reported in 1 cases, wound dehiscence was noted in 3 cases, edema in 2, hematoma in 1 and recurrence was found in 2 case. In patients in which wound was left open for secondary healing, wound infection was reported in 4 cases, edema in 1 case and recurrence was found in 1 case. In patients who underwent Limberg flap transposition, wound infection was reported in 1 case, flap necrosis in 1 case, edema in 1 case, hematoma in 2 and recurrence was not found in any case.

Table 1: Complications according to surgical procedures

| Complications | Surgical Procedure | | | | N=60 |
|--|-------------------------|---|---------------------------------------|-----------------------------------|---------|
| | Marsupialization (n=15) | Completely closed in primary closure (n=15) | Left open in secondary healing (n=15) | Limberg flap transposition (n=15) | |
| Wound infection | 2 | 1 | 4 | 1 | 8 (13%) |
| Wound Dehiscence | 0 | 3 | 0 | 0 | 3 (5%) |
| Flap Necrosis | 0 | 0 | 0 | 1 | 1(2%) |
| Edema | 0 | 2 | 1 | 1 | 4 (15%) |
| Hematoma | 1 | 1 | 0 | 2 | 4 (15%) |
| Recurrence (within follow up of 2 year period) | 1 | 2 | 1 | 0 | 4 (15%) |



Graph 1: Complications according to surgical procedures

Discussion

The history of surgical therapy of pilonidal disease now dates back to more than a century. But the management thereof still remains debatable even after introduction of many new methods, as also the appreciable modifications in the conventional ones.³

Local trauma or irritation, a sedentary occupation, male sex, adolescence or youth, and a familial disposition seem to be associated with the development of pilonidal sinus. Local trauma and overweight are the most important conditioning factors for development of symptomatic pilonidal sinus disease.⁴

The management of pilonidal sinus is controversial and are managed by excision and healing by secondary intention, excision and primary closure and excision with flap cover. A modification of the standard excision is 'marsupialisation'. The skin edges are not excised, but are sutured to the sides of the wound. This was a compromise between a completely closed and a completely opened wound and permits a some what smaller opening than does the open technique. The local advancement flap techniques aims to reshape and flatten the natal cleft to reduce friction, local warmth, moisture and hair accumulation. Many techniques have been propounded to close the defect following sinus excision – a skin flap or a flap of both skin and muscle or a skin transposition by Z-plasty or N-shaped.⁵

The most unpleasant complication after pilonidal sinus surgery is persistently unhealed midline wound which is commonly seen after laying open the sinus or wide local excision without primary closure. Such wounds are often painful, delay the return to normal activity and usually demand regular nursing and medical attention. These wounds can persist for longer periods of time. Considering the above disadvantages, the primary aim of treatment should be to reduce the duration of treatment, cost and recurrence rate.⁶

In the present study, the Limberg flap method led to higher postoperative complications, while primary closure resulted in a higher recurrence rate which are similar to study conducted by Onder A et al⁷ Primary closure method is more popular because it accelerates wound healing, shortens the times of surgery and hospitals stays, and has proven to be practical. Possible reasons among postprimary recurrence include scar formation in gluteal cleft and tension. Saylam B et al⁸ compared primary closure, D-flap, Karydakis technique and Limberg flap surgery,

recurrence rates were similar for all four treatment methods (7.5–13.5%) and recurrence increased 14.44-fold following the development of wound infection with higher recurrence rates in obese patients. Ersoy FO et al² reported that postoperative complication rates of unroofing and marsupialization are low, but require long wound care, observed a high recurrence ratio among subjects treated by marsupialization, and high complication rates in the primary closure and Limberg flap groups. Gupta PJ³ compared excision, marsupialisation technique and the technique of excision of the sinus tracts using a radiofrequency device and revealed that radiofrequency sinus excision technique has definite advantages over sinus excision and marsupialisation technique as it results in shorter hospital stay with reduction on postoperative pain and early resumption to work.

Excision and primary closure is a safe operative procedure for uncomplicated cases. It is found better in terms of short hospital stay, less postoperative time off work, quick healing and less chances of recurrence. Complicated, complex or recurrent pilonidal sinuses require more aggressive treatments such as Rhomboid flaps, skin grafting, Z plasty or gluteal myocutaneous flaps etc.⁶ Recurrence rates seem to be decreased by the application of these procedures. Though, it should taken into consideration that these procedures lead to longer operative and postoperative hospitalization periods. The possibility of a debilitating complications such as flab necrosis should also be taken into account.^{9,10}

Conclusion

Postoperative wound complications have always been the main cause of concern followed by the risk of recurrence, in the surgical treatment of the pilonidal sinus disease. The present study reported that flap method resultant in higher postoperative complications and lower recurrence rate, while primary closure resulted in a higher recurrence rate.

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