

Pilonidal Sinus Excision: New Vision

Mohamed Nada and Tamer M S Salama*

Department of General Surgery, Ain Shams University, Egypt

Abstract

Background: Pilonidal sinus is chronic inflammatory condition that usually affects young adults, despite of the current advances in the field of medical research the best approach in managing Pilonidal sinus disease is not yet well defined. This study aims to evaluate a new technique for the excision of pilonidal sinus and investigates its effectiveness in terms of operation time, healing time, and the duration of hospitalization, the degree of postoperative complications and rate of recurrence

Methods: One hundred patients (93 males and 7 females) suffering from uncomplicated pilonidal sinus disease, underwent this new technique for pilonidal sinus excision. This technique based on lay open all visualized main and sides tracks of the sinus followed by excision of the whole area and closing underneath fascia and subcutaneous tissue

Results: The mean duration of intervention was 40 minutes and patients were discharged one day after the operation. The mean time for recovery and return to normal physical activity was 12 days (There were no intraoperative complications or mortalities in all cases).

Minor wound infection was the most common complication found as it occurred in 15 cases. Only 3 out of the 100 cases had recurrence. Finally, the overall patients satisfaction was more than 95%.

Conclusion: From our experience, this technique possesses all the criteria for ideal pilonidal sinus surgery as it is associated with short hospital stay, fast wound healing, low recurrence rate and minimal complications.

Keywords: Pilonidal sinus; Surgery for pilonidal sinus; Complication of pilonidal sinus

Introduction

Pilonidal sinus is chronic inflammatory condition that usually affects young adults and results from invasion of fallen hair into the skin. It mostly occurs in the natal cleft of the sacrococcygeal region and is presented by inflammation, abscess and sinus formation [1,2]. Despite of the current advances in the field of medical research, the best approach in managing Pilonidal sinus disease is not yet well defined. However, the treatment regimen should ideally minimize pain, allow short hospitalization time, reduce complications and rate of recurrence and should provide rapid recovery and return to normal daily activities [3]. There are several surgical procedures described for the treatment of pilonidal sinus disease including incision and drainage, excision and healing by second intention, which is currently the most commonly used procedure [4-6], excision and primary closure, excision with reconstructive flap techniques [7], however, the effectiveness of excision and primary closure in the treatment of pilonidal sinus disease is highly debated since it is associated with a high rate of recurrence. This can be due to the midline scar left from the procedure which further triggers the accumulation of loose hair, which is the original cause of pilonidal sinus formation [5,6]. Some less commonly used techniques such as phenol injection, cryosurgery and electrocauterization [8,9]. This study aims to evaluate a new technique for the excision of pilonidal sinus and investigates its effectiveness in terms of operation time, healing time, and the duration of hospitalization, the degree of postoperative complications and rate of recurrence.

Patients and Methods

One hundred patients (93 males and 7 females) suffering from uncomplicated pilonidal sinus disease with an age range of 18 to 50 years were enrolled in this study. Patients were admitted at the department of general surgery at El Demrdash Hospital at Ain Shams University in Cairo, Egypt from January 2013 to May 2015. An approval from the ethical committee of the Faculty of Medicine at Ain Shams

University was obtained to conduct this study. All patients were presented with chronic non-recurrent uncomplicated pilonidal sinus disease. The procedure was fully and clearly explained to patients who also provided an informed consent before operation. Patients were excluded from this study if any of the following was found: signs of pilonidal sinus disease complications such as abscess, osteomyelitis of the sacrum, fistula communicating with the rectum or anal canal, major medical co-morbidity diabetes or cardiac diseases. Furthermore, uncooperative or mentally ill patients were excluded. All patients were evaluated by clinical examination including digital rectal examination and a complete patient history was taken. Baseline investigations were performed to all patients including CBC, blood urea/sugar, hepatitis, full chemistry and coagulation profile. Chest X-ray and ECG were done in patients who aged more than 40 years. An informed consent was taken from all patients. Intra-operatively, patients were put on the operating table in a prone position after taking spinal anesthesia. IV ceftriaxone was then given. For good exposure of the inter gluteal region, lateral traction from the lateral margin of the gluteus using adhesive tape was performed.

This technique is based on probing and lay open the main track and all visualized side tracks, which become visible to the naked eye after opening the main track, followed by gradual curettage to the whole raw area during which any pouting of granulation tissue represents an opening to side track, which was subsequently probed and lay

*Corresponding author: Dr. Tamer M Said, Lecturer of General Surgery, Department of Surgery, Ain Shams University, 16 Foud Badwany Street Nasr City, Cairo, Egypt, Tel: 01113623458; E-mail: drtamer1981@hotmail.com

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opened. When no more opening for side tracks were detected, full excision around and just below the whole lay opened tracks was done guided by underneath healthy fat tissue, making sure that there is no more unhealthy granulation tissue or communicating tracks. Bilateral flaps including fascia were then elevated over the gluteus muscle not exceeding 2 cm to avoid ischemia. Then closure of the deep layer was started by an interrupted stitch using monocryl 2/0 through the deep subcutaneous fat and fascia elevated on both sides together with the central fascia over the sacrum to decrease dead space. Finally, 2 or 3 stitches were taken to approximate the superficial subcutaneous fat, while the skin was left open. For hemostatic reasons, patients were nursed in the supine position. All Patients were discharged after one day of the operation and were followed-up once per week for 3 weeks and then after 3, 6 and 12 months from the operation. At each visit, wound examination was performed to assess healing and detect any development of complications.

Results

One hundred patients (93 males and 7 females) suffering from uncomplicated pilonidal sinus disease were enrolled in our study. The male to female ratio was 13:1 with a mean age of 37.6 years (ranged between 18 and 50 years). The most common presentation was purulent discharge from multiple openings (65%), single opening (25%) and history of swelling (drained abscess) followed with discharge (10%) (Table 1). The mean duration of intervention was 40 minutes (ranged between 30 and 60 minutes) and patients were discharged one day after the operation. The mean time for recovery and return to normal physical activity was 12 days (ranged between 10 and 14 days). There were no intraoperative complications or mortalities in all cases. Minor wound infection was the most common complication found as it occurred in 15 cases (15%). It was treated with antibiotic and frequent wound curettage during follow-up. Wound dehiscence in the superficial layer of the wound occurred in 5 cases only (5%) and it was treated with antibiotic and daily wound dressing. Only 3 out of the 100 cases had recurrence. Postoperative pain was noticed in 10 cases and it only lasted for one week after the operation and responded well with analgesics (Table 2). In our study there was no occurrence of hematoma or seroma because the skin was left opened. However, one case had bleeding the next day after the surgery and it stopped with compression. Complete wound healing by secondary intention occurred after 23 day ranging from 18 to 27 days. Finally, the overall patient satisfaction was more than 95%.

Discussion

Pilonidal disease is not considered a life-threatening condition. However, it can adversely affect patients' quality of life due to the associated pain, sinus discharge and some complications such as abscess formation [10]. This disease can be treated with two distinct surgical methods comprising open and closed methods. The open method includes leaving the residual cavity opened after sinus excision, whilst the closed method includes closure of the residual cavity after sinus excision [11]. The open method is easy to perform and is associated with low recurrence rate. However, its main disadvantages can be concluded in the slow wound healing and the requirement of daily wound care [12]. In the closed methods, there are different types of wound closure, including midline closure, an off-midline closure or a flap reconstruction. However, none of these techniques are considered optimum in the treatment of pilonidal sinus disease [13].

In this study, the mean time for post operative hospital stay and the mean time required for complete wound healing associated with

Gender N (%)	Male	93	93%
	Female	7	7%
Ratio		13:1	
Age	Range	18	50
	Mean ± SD	37.620	11.578
Most common presentation N (%)	purulent discharge from multiple opening	65	65%
	single opening	25	25%
	History of swelling (drained abscess) followed with discharge	10	10%
Duration of intervention	Range	30 min	60 min
	Mean ± SD	40 min	8.936
Recovery time to normal physical activity	Range	10 day	14 day
	Mean ± SD	12	1.421
Complete Wound healing by secondary intention occurs after	Range	18 day	27 day
	Mean ± SD	23	3.318

Table 1: Shows demographic, preoperative and operative data of the patients.

Postoperative complications	N	%
Minor wound infection	15	15
wound dehiscence occurs in 5 cases	5	5
recurrence	3	3
Hematoma	0	0
Seroma	0	0

Table 2: Shows incidence of postoperative complications of this technique.

our technique were investigated since they are considered the main indicators for successful treatment. We found that the mean post operative hospital stay was only one day, while the mean time required for complete wound healing was about three weeks. These durations are comparable to that of the closed procedure and are far less than that of the open technique. In a study performed by Zahid et al. [14], they found that the average hospital stay for wide open excision method was 5.6 days and for Karydakias procedure (a closed technique) was 2.5 days. Moreover, they found that complete wound healing occurred after 7.5 weeks in cases with open excision, while in karydakias cases complete wound healing occurred after 3 weeks. Another study [15] stated that complete wound healing occurs at 6-12 weeks after open excision and at 10-16 days after closed excision. From our experience, the incidence of minor wound infection in our technique was 15%, while according to the literature; the incidence of wound infection in wide open excision of pilonidal sinus disease was reported to be 1.8 to 30% and it was between 3.8% and 14% with Karydakias procedure [16,17].

In a study conducted by Zahid et al. [14], 75% of patients had experienced postoperative pain after wide open excision, while 25% of patients had experienced postoperative pain following Karydakias procedure. Similar results were obtained in another study [18], where mild to moderate postoperative pain had occurred after closed pns excision technique and disappeared after 2 weeks, while in case of wide open excision the pain was moderate to severe and it took almost 5-7 weeks to resolve. In our study, postoperative pain was mild to moderate and it resolved in duration closely comparable to pain that occurs after excision with closure technique where it didn't exceed one week and responded well to analgesics. In this study, recurrence occurred in only three cases with an incidence rate of 3%. This low rate of recurrence may be due to allowing wound healing by secondary intention. This

rate of recurrence is much lower than rate of recurrence associated with excision and closed techniques and very similar to rate of recurrence associated with excision and open technique. This was also supported by results of other studies [18,19], in which the recurrence rate after wide open excision was reported to be 0.6% and 5%, while in cases of wound closure after excision, it was 3.5% and 42%. In this study, there was no seroma or hematomas in contrast another study [18] states that this complication is common after wound closure in pns surgeries procedures [18,19].

In this study, we found that our technique has combined the benefits of wound closure procedure which has fast wound healing and short hospital stay with minimal complications with the benefits of open wound excision procedures which are associated with low recurrence rate and absence of seroma and hematoma. Moreover, it has an overall patients' satisfaction of more than 95%.

Conclusion

From our experience, this technique possesses all the criteria for ideal pilonidal sinus surgery as it is associated with short hospital stay, fast wound healing, low recurrence rate and minimal complications.

Conflict of Interest

No any type of financial support, the authors report no conflicts of interest.

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