Original Article

Comparision of Excision and Primary (Midline) Closure with Karydakis Technique in the Surgical Treatment of Pilonidal Sinus

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Abstract

Pilonidal sinus is a common anorectal problem that occurs in the cleavage between the buttocks (natal cleft) and causes discomfort and embarrassment & absence from work for the sufferers. It typically affects young men and women. Numerous surgical procedures have been described but treatment failure and disease recurrence is common leading to considerable morbidity in these otherwise healthy patients. **Objective:** To compare the effectiveness of excision and primary closure with Karadykis Technique of cleft closure in the surgical treatment of pilonidal sinus. **Materials and Methods: Setting:** Department of Surgery, Ch. Rahmat Ali Memorial Hospital, Township, Lahore. **Study Duration**: 3 years (Jan 2009 to Dec 2011). **Sample Size:** 40 patients, 20 in each group. **Inclusion Criteria:** All adult males and females with clinical diagnosis of chronic pilonidal sinus. **Exclusion Criteria:** Recurrent pilonidal sinus disease, acute pilonidal abscess. **Results:** Out of 40 patients, 35 (87.5%) were males and 5 (12.5%) were females. Age range was 16 to 35 years with mean age of 25.5 years. Group A consisted of 20 patients who underwent Excision and Primary closure while group B had 20 patients who underwent Karydakis Technique of cleft closure. The postoperative complications encountered in Group A were post operative pain, wound infection, numbness at the site of surgery and recurrence while in Group B, complications included post operative pain, hematoma/seroma formation, wound infection, wound dehiscence, numbness at the site of surgery and recurrence. **Conclusion:** Karadykis procedure is better than excision and primary midline closure in terms of less postoperative complications, reduced hospital stay and recurrence rate.

INTRODUCTION

Pilonidal disease is a common problem that occurs in the cleavage between the buttocks. It is a common problem in primary care due to recurrence following surgery & the need for frequent & time consuming wound care. Primary dehiscence & infection following closure are potential early complications. The term pilonidal is derived from Latin words i.e. hair (pilus) and nest (nidus)[1]. Pilonidal disease was first described by Hodges in 1880[2] and is diagnosed by the finding of a characteristic epithelial tract (the sinus) situated in the skin of a natal cleft, a short distance behind the anus and generally containing hair. During 2nd world war, the diseased was

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common in jeep drivers, which lead to it being known as Jeep Disease.
Pilonidal disease may arise in one of these forms;

1. Acute Abscess
2. Chronic pilonidal sinus tract/tracts
3. Complex disease characterized by chronic recurrent abscesses with extensive branching sinus tracts

There are various surgical options for the treatment of non-complicated chronic pilonidal sinus. These include

1. Excision and lay open technique[3]
2. Excision and primary (midline) closure[4]
3. Karydakis Procedure[5]
4. Bascom's Technique[6]
5. Excision and marsupialization
6. Excision and reconstructive flap techniques[6]
7. Fibrin glue
8. ND YAG and ruby lasers
9. Phenol injections[7]

Excision and primary closure involves excision of midline sinuses through an elliptical incision around the sinuses deep to the healthy presacral fascia, with removal of minimal surrounding skin, followed by closure of the wound with interrupted non absorbable suture with or without a suction drain[8].
Karydakis was the first to advocate asymmetric closure of pilonidal wounds to decrease recurrence. This technique avoids placing a wound in the midline at the depth of the anal cleft. It also flattens the cleft, reducing hair accumulation & mechanical irritation.
Karydakis procedure involves asymmetrical elliptical incision (4-5 cm long) made around the main tract of pilonidal sinus. A boat shaped wedge of tissue is removed up to pre sacral fascia with mobilization of the flap from medial side of the wound, which is sutured to the sacrococcygeal fascia. Wound is closed away from the midline with interrupted sutures with or without a suction drain[9]. Karydakis reviewed his 35 years experience with this operation, which he performed on 6545 patients & found 1% recurrence rate[21]. Another surgeon attributed most recurrence to part of wound encroaching on the midline[17].
The study was carried out to compare the results of excision and primary midline closure with Karydakis technique in terms of various post-operative complications, hospital stay and recurrence rate in our set up.

PATIENTS AND METHODS

The interventional comparative study of 40 patients was carried out in Surgical unit, Ch. Rahmat Ali Memorial Hospital, Lahore from Jan 2009 to Dec 2011. All the cases were admitted through Out Patient Department as elective cases after confirming their diagnosis by taking a detailed history, and examination. Patients with acute pilonidal abscess, recurrent complicated pilonidal disease, fistulae communicating with rectum/anal canal and those who were lost to follow up, were excluded.
Patients were randomly divided into two groups having equal study population. Baseline investigations like full blood count, blood urea/sugar and hepatitis screening were performed in all patients. X ray chest and ECG were done in selected cases to assess their fitness for general anaesthesia. An informed consent was taken for the type of surgery.

Group A

Patients underwent excision and primary midline closure while group B patients were subjected to Karydakis procedure. A suction drain was placed in the wounds of both groups. After surgery patients were looked after in ward for postoperative complications like pain and bleeding and all findings were recorded. Intravenous broad spectrum antibiotic prophylaxis

was given to all patients. Patients in group A were sent home between 4th and 6th post-operative day after removing their suction drains, with the instructions of daily site bath, dressing, oral antibiotics and analgesics. Postoperatively group B patients were nursed in lateral position to avoid shearing of the advancement flap. Most of them were discharged from hospital on 3rd postoperative day after removing the suction drain. Stitches were removed on 10th postoperative day. All the patients were followed at 2 weeks, 2 months and 6 months intervals after surgery. At each visit, wound was examined and positive findings were noted.

RESULTS

In our study of 40 patients, 35 patients were male (87.5 %), while 5 patients were female (12.5%) with an age range of 16 to 35 years and a mean age of 25.5 years. Mean weight was 68.9 kg for the group A patients and 78.2 kg for group B. Weights were moderately high in all patients. The most common presentation among both groups included multiple blood stained or purulent discharging sinuses in 90% cases, and a single discharging sinus in 10% of cases.

Postoperative morbidity variables that were studied included pain, hematoma/seroma formation, wound infection, healing time, wound dehiscence, scar pain, hospital duration and recurrence within 6 months duration. Moderate pain was experienced post-operatively in first few days by 13 patients in Group A (65%) and 6 patients in Group B (30%). The pain responded to conventional analgesics given to all those patients. Only one patient in Group A developed post-operative hematoma after removal of suction drain but resolved with conservative management.

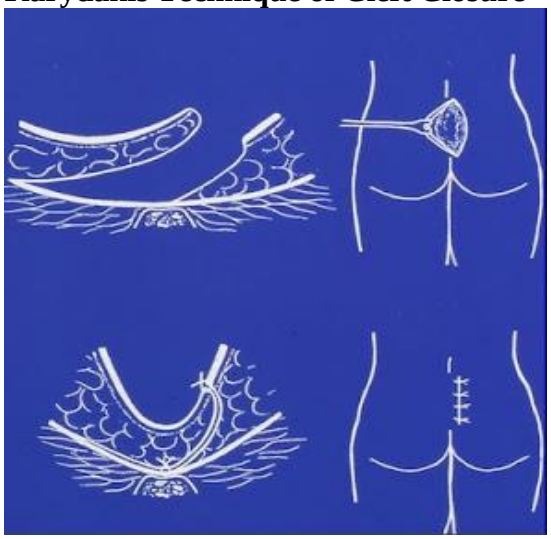
Group B

Remained clear of this complication. Wound infection occurred in 4 (20%) patients in Group A while only 2 patients had this problem in Group B (10%). 2 patients in group A got wound dehiscence secondary to infection. They were managed by cleaning and daily dressing & wounds were left open and secondary suturing was done after control of infection. Mean hospital stay duration in Group A was 6 days while that of Group B was 3 days. Wound healing was completed in 4.5 weeks in Group A and 3 weeks in Group B. At 6 months of follow-up, 4 patients (20%) in Group A and 1 patient in group B developed recurrence.

Table-1
Complication

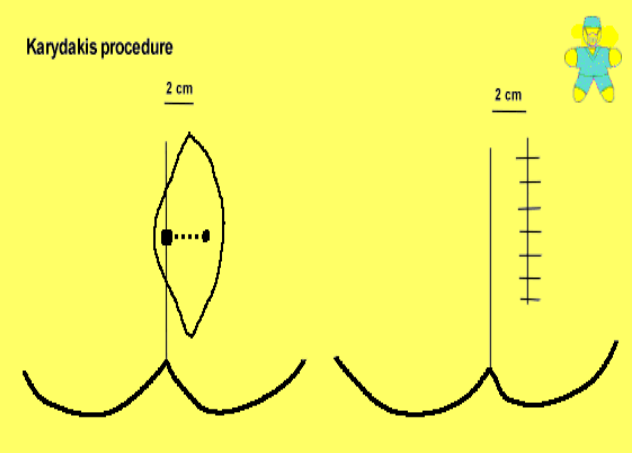
Variables	Group-A	Group-B
Pain	13 (65%)	6 (30%)
Hematoma/Seroma Formation	1 (5%)	0 (0%)
Wound Infection	4 (20%)	2 (10%)
Scar Pain	4 (20%)	1 (5%)
Wound Dehiscence	2 (10%)	0 (0%)
Hospital Stay	5 days	3 days
Healing Time	4.5 weeks	3 weeks
Recurrence	4 (20%)	1 (5%)

Figure-1
Karydakis Technique of Cleft Closure



(http://proceduralist.blogspot.com/2009/03/pilonidal-sinus-karydakis-procedure.html)

Figure-2
Karydakis Technique



(http://www.surgical-tutor.org.uk/default-home.htm?system/abdomen/pilonidal_sinus.htm)

DISCUSSION

Sacrococcygeal pilonidal disease is an acquired condition usually seen in young adults and carries high pre & postoperative morbidity and patients' discomfort. Ideally, definitive treatment of pilonidal disease should be cost-effective, require little or no hospitalization, be associated with minimal discomfort and wound care, and have a low recurrence rate[10, 11]. Two procedures currently employed for the treatment of pilonidal disease are midline excision and primary closure and Karadykis technique of cleft closure.

The onset of pilonidal disease is rare both before puberty as well as after the age of 40[12]. In this study, the minimum age was 16 years and maximum age was 36 years with mean age of 25.5 years. This disease has been shown to have peak incidence in 3rd decade of life[13] and that was borne out in this study. There were 35 males (87.5%) and 5 females (12.5%) and male to female ratio of around 10:1, as seen in other studies[2]. Males are affected more commonly probably due to their hirsute nature[14].

In this series, 65% patients experienced postoperative pain in Group A and 30% in Group B. Our study is supported by an almost similar study carried out by Al Jaberi et al[15]. This pain was of moderate severity and subsided completely within 2 weeks while in case of midline excision and primary closure, it took almost 3-4 weeks to settle completely.Postoperative bleeding was insignificant in both groups. Only 1 patients developed haematoma/seroma beneath the skin flap but it did not require any intervention and resolved on conservative treatment. The rate of wound infection and wound dehiscence in our study was statistically insignificant.

In our study the average hospital stay for Group A was 5 days and for Karydakis procedure it was 3 days. In literature the mean hospital stay mentioned is 6.74 days[16], 4 days[17], 2 days[11] and 2.6 days[18] in different studies. In the current study, wound healing was significantly better in group B as compared to group A. Similar results were given by other studies[19].The recurrence rate proved to be significantly lower in Group B as compared to Group A. The Karadykis method is consistently associated with fewer recurrences than midline excision, which is attributed to the fact that the Karadykis method produces a shallow midline furrow, without scarring and/or suture holes. This is believed to leave the patient less susceptible to hair penetration than a midline wound [20].

CONCLUSION

Pilonidal disease is a common & complex condition that causes both discomfort & embarrassment to the sufferers. It also poses a surgical challenge to the surgeons. Treatment failure & disease recurrence are prevalent. Successful management depends on adherence to well described surgical principles. Regardless of the surgical technique used standard principles of wound care are essential for good end results.

Karadykis method is a better surgical option for the treatment of pilonidal sinus disease in terms of complications, hospital stay and recurrence and it should be offered to all the patients.

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