Pilonidal Sinus: Semi-Closure An Emerging Surgical Technique

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ABSTRACT

Objective — *To find out effectiveness of semi-closure technique for the treatment of pilonidal sinus.*

Study design — *Descriptive case series.*

Place & Duration of study — *Dr. Ziauddin Hospital Kemari campus and Surgical Ward 21, Jinnah Postgraduate Medical Centre Karachi, from January 2016 to December 2016.*

Methodology — *Patients with simple pilonidal sinus disease were included in this study. The semi-closure technique was used in all patients. Variables assessed included operating time, wound healing, and duration of hospital stay.*

Results — *A total of 43 patients were included in the study. There were 35 (81.4%) male and 8 (18.6%) female patients. The mean age of the patients was 23.7 + 6.8 year. Only 5 (11.6%) patients had a positive family history. Twenty-one (48.8%) patients were drivers by occupation and 10 (23.3%) were shopkeepers. The mean operating time was 34.4 + 3.9 minutes. The mean healing time was 25.4 + 4 days.*

Conclusions — *Surgical procedure of simple pilonidal sinus by semi-closure technique was completed in short duration. The hospital stay was also short and rapid healing of wound was observed in these patients.*

Key words — *Pilonidal Sinus, Semi closure technique, Pilonidal sinus – occupation.*

INTRODUCTION:

Pilonidal sinus is a common surgical condition which is benign in nature. It is a chronic disease and associated with significant morbidity. It commonly affects the inter-gluteal cleft region. Other anatomical locations involved include umbilicus, axillae, neck, interdigital clefts and the breast.[1] The incidence of the disease is reported as 26 per 100,000 persons. It is 2 – 4 times more common in males as compared to the females.[2-5] This disease is frequently seen in truck drivers, students and office workers. This is due to prolonged sitting position.[6] Accumulation of the broken hairs in the gluteal cleft and presence of the risk factors like obesity, moisture, hairy back and vibratory movements are associated risk factors. Breach in the skin of the cleft leads to inflammation and cyst formation.[7] Infected cyst leads to abscess formation that needs surgical drainage.

Surgical treatment of the disease has to be individualised. Surgical procedure must be effective and result in early discharge from hospital. There should be no recurrence of the disease. These objectives are difficult to meet, thus different surgical techniques have been adopted by the surgeons over the years, but still controversy exists as to the most appropriate procedure.[8] Different surgical techniques that are in practice include Limberg's transposition flap, Karydakis flap reconstruction and complete surgical excision of the cyst with laying open of the wound, semi-closure or primary closure of the wound.[9,10] With so many techniques available, the

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ideal choiceto be adopted for the patients, is still debatable.[11]

Few studies have been conducted for the treatment of pilonidal sinus with semi-closure technique. It was reported as simple and effective procedure, with decreased rate of complications and recurrence. It is claimed to be better than open technique as patient experience less pain and early wound healing with quick return to work.[12] The aim of this study was to find out demographic factors and to determine the effectiveness of semi-closure technique for the treatment of pilonidal sinus in reference to operating time, wound healing, and duration of hospital stay.

METHODOLOGY:

A descriptive case series was conducted on patients with simple pilonidal sinus disease presenting to the surgical out-patient department of Dr. Ziauddin Hospital Kemari campus and Surgical ward 21, Jinnah Postgraduate Medical Centre Karachi, from January 2016 till December 2016. Patients of 16 year of age and above, having symptomatic primary pilonidal sinus in the inter-gluteal cleft were enrolled in this study. Patients with recurrent disease, abscess formation, and those who had co-morbid conditions (diabetes, hypertension, cerebrovascular accident resulting in paralysis) were excluded from study. A written informed consent was taken.

Surgical procedure was done under general anaesthesia. Natal area was shaved. Patients were operated in the prone position for better access to the pilonidal sinus. The buttocks were retracted laterally with a tape. An elliptical incision mark was made around the sinus and methylene blue dye was injected into the sinus. Sinus dissection was done up to the posterior sacral fascia. Hemostatis was secured. Wound was washed thoroughly with hydrogen peroxide and normal saline. Skin flaps on both sides were sutured to the posterior sacral fascia with continuous subcutaneous technique using absorbable suture material. The semi closed wound was washed again with povidone iodine and a gauze strip soaked with povidone iodine, was placed in the wound cavity to allow it to heal by secondary intention. Compression bandage was done over it. Postoperatively all patients were given one dose of intravenous antibiotic. Mobilization of the patients was done as soon as possible. Patients were discharged from the hospital after inspection of the wound and change of dressing. They were called for regular follow ups in the out- patient department.

Data was collected on pre designed form. Age, sex occupation, and family history were recorded. All the procedures were done using semi-closure technique. The operating time and hospital stay for each patient after the surgery were noted. Regular follow for six months was done. The post-surgery day on which complete healing occurred was also noted. Data was analysed on SPSS version 20. All qualitative variables are presented as frequency and percentages and all quantitative variables as mean and standard deviation.

RESULTS:

Forty-three patients who met the inclusion criteria were included in this study. Males predominated (n=35 - 81.4%) in this series. The mean age of the patients was 23.7 + 6.8 years. Five (11.6%) patients had a positive family history of pilonidal sinus. Of the total 21 (48.8%) patients were drivers, 10 (23.3%) shopkeepers and 5 (11.6%) students.

The operating time for each surgery was noted from the incision till the dressing was done. The minimum operating time was 29 minutes and maximum 45 minutes, average operating time being 34.4 + 3.9 minutes. The operating times for patients is shown in table I.

DISCUSSION:

Pilonidal sinus is a benign disease, most commonly located in the gluteal cleft. It usually affects the young individuals as found in this study. Most of the patients in this study were between the age of 19 year and 25 year. This is similar to other study

Table I: Operating Time

Operation time (mins)	No of Patients (n)
29-34	24
35-39	15
40-45	4

Table II: Hospital Stay

Duration of Hospital stay (days)	No of Patients (n %)
1	n - 4 (9.3%)
1.5	n - 14 (32.6)
2	n - 24 (55.8%)
2.5	n - 1 (2.3%)

Table III: Healing time

Healing time (days)	Male	Female
21-25	17	7
26-30	14	1
31-35	4	0

conducted in Iran where mean age was 25.1 year.[3] Another study also showed similar average age of 21.9 + 3.09 year.[12] It is therefore a disease of young people and importance lies in the fact that being chronic in nature requires a surgical treatment with rapid healing time and decreased loss of work days.

The disease is more common in males as compared to the females. In this study the ratio of males to females was 4:1. A study conducted in Greece reported a similar ratio.[2] A study from Egypt reported it to be six times more common in males. This may be due to the fact that males have increased body hair and larger amount of sex hormone secretion in younger population can lead to greater activity of pilosebaceous glands.[1,3]

A significant positive family history of pilonidal sinus was found in a study from Iran where 71.7% patients had such predisposition.[3] A study conducted in Germany reported that positive family history is significant for pilonidal sinus and can lead to earlier onset of disease and greater chances of recurrence.[13] A case-control study from Turkey on pilonidal sinus in teenagers found a significantly higher positive family history in disease group as compared to the control group.[14] In our study only 11.6% of the patients had a positive family history. This difference may be due to the small sample size. Thus studies with larger sample size may throw light on this aspect. In literature, occupation and its association with pilonidal sinus has been extensively reported. In this study 48.8% of the patients were drivers. It is stated that those with prolonged sitting time of greater than four hours are more prone to get pilonidal sinus disease.[3]

Patients in this series were operated using semi-closure technique which resulted in a much shorter operating time, and hospital stay as 55.8% were discharged after two days. Complete healing time for the wound postoperatively was on average 25.4+ 4 days. A study conducted in Greece using a similar semi-closure technique for pilonidal sinus demonstrated similar results with average operation time of 48.7 ± 3.8 min.[2] In other study that compared the semi-closure technique with open method found that patients who underwent semi-closure technique had better postoperative outcomes with decreased complications and earlier return to work.[12]

It was found in a study that laying open of the wound and allowing to heal by secondary intention, takes longer time with only 19.5% of the patients achieving healing after one month.[15] Another study conducted by Rosato et al determined that average hospital stay was 5.8 days with open method and the complete healing time of the wound was about 45 days.[16] A study by Varnalidis et al, that compared healing time of pilonidal sinus after treatment with different surgical techniques, reported that average healing time with open excision method was 46.4 days.[17]

No recurrences occurred in our study. Recurrences have been reported in different studies with different techniques. With Karyadakis procedure 1-4 % recurrence has been reported. A recurrence of 3.5% to 42% have been reported with simple midline closure of the pilonidal sinus.[1] The semi-closure technique is a good option for pilonidal sinus and thus it should be considered for further research with large sample size and in different populations with longer follow ups to determine its effectiveness in rapid healing of the wound and in recurrent pilonidal sinus.

CONCLUSIONS:

Treatment of simple pilonidal sinus with semi-closure technique has decreased operating time, short hospital stay and early healing of wound with minimal complications.

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