
SURGICAL TREATMENT OF PILONIDAL SINUS, A COMPARATIVE STUDY

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Summary

This prospective study was designed to compare the three surgical procedures used in the treatment of pilonidal sinus. 103 patients divided in to three groups by simple random sampling, Group I, 45 patients treated by Excision alone, Group II, 45 patients treated by Excision and simple primary closure while group III, 13 patients treated by Excision and w plasty. Comparison between these procedures with regard to Gender, Sex, Obesity, operating time, hospital stay and complication include recurrence by using ANOVA test and other statistical tests. In conclusion, there is relation between obesity and PND and its Recurrence, also excision alone is satisfactory procedure, because it take less operative time with short hospital stay and associated with fewer complication including recurrence, also meticulous hygiene and shaving of present healing area as well as daily regime to obese patient should be taken in consideration to avoid recurrence.

Introduction

PILONIDAL SINUS (PNS) is a common disorder of sacrococcygeal region affecting young people^{1,2} it was first reported in 1883 by herbert mayo³.

Sacrococcygeal PNS is pathologically, irrespective of origin, a foreign body granuloma, A nidus of hair is almost invariably found within these sinus tracts. The disease may be congenital or acquired⁴.

In 1950, it was thought to be of congenital origin as it is secondary to the congenital remnant of an epithelial lined tract from postcoccygeal epidermal cell rest on vestigial scant cell⁴, but its now widely accepted as an acquired disorder which is based on observation that congenital tract do not contain hair and are lined by cubodial epithelium and

high incidence of chronic PNS disease in patient who are hirsute further support this theory because excessive hair growth in the natal cleft though to be a factor in initiating these sinuses^{5,6}, also its now classified as follicular occlusion disease based on cytokeratin expression⁷.

PNS disease most commonly seen in young hirsute male and less commonly in female⁴ and it is often presented initially at puberty, when hair growth and activity of sebaceous gland increased^{8,9}.

The external orifice of PNS may be single or multiple and it is usually in the midline approximately 5 cm from anus. Staphylococcus and bacteroid species are present in at least 50% of cases¹⁰. Many surgical methods have been advocated for treating PNS because of high recurrence rate, but ideal treatment

should provide rapid rate of cure, a lower recurrence rate, and minimize hospitalization admission¹¹.

The Purpose of our study is to compare the three major operative procedures adopted worldwide regarding operating time, hospital stay and complication including recurrences

Patients and Methods

During the period between Jun 1993 through Dec. 2002, 103 patients underwent surgery for P.N.S.

Their age, sex, weight and height and Body mass index, (BMI) were recorded their main presenting symptoms and signs, the number of fistula also duration of disease, any previous operation were also recorded.

Simple random sampling method, the first two types of surgical procedure performed, firstly: Excision and the wound left open for healing by secondary intention, secondly: Excision and primary simple closure using 0 monofilament suture and thirdly: Excision and w plasty procedure used for the recurrences cases only. Hair in the operative field was shaved one hour before surgery and all patients received Igm cephardin I.V and general anesthesia performed, and positioned prone with their buttocks separated with adhesive tape attached to operating table to open the intergluteal space. The operating time and hospital stay recorded, post operative complications including (wound dehescence, wound infection, haematoma, skin necrosis and recurrence) and follow up was done for (85 patient) for 20 month to detect any recurrence.

Comparison between the three operative procedure by using ANOVA test and other statistical tests regarding age, sex, obesity, operating time, hospital stay, postoperative complication including recurrence was done.

Result

103 patients included in this study, the patients characteristics shown in table no (1): their age range from 15 – 65 year with mean age (35) year, there are 76 male (73.7 %) and 27 female (26.3%), also the distribution of studied patients according to BMI shown that, 48 patient (46.4%) within the normal weight while the reaming 55 patients (53.4%) are overweight.

Table I. Patients characteristics

Parameters		n (%)
Age (year)	15-24	15 (26.9)
	25-44	80 (77.5)
	≥ 45	8 (10.5)
B.U.I (kg/m²)	Normal weight (18.5-24.9)	48 (46.6)
	Over weight (25-29.9)	55 (53.4)
	Purulent discharge	53 (51.4)
Symptoms & signs	Pain	43 (41.7)
	Swelling	40 (38.0)
	Bleeding	30 (29.0)
Fistula	Single	63 (61.1)
	Multiple	40 (38.9)
	No operation	60 (58.2)
Previous surgery	Drainage only	28 (22.4)
	Previous operation	15 (19.4)

The main presenting symptoms and signs are purulent discharge in 53 patients (51.4%) and pain in 43 patients (41.7%), also the number of fistulae shown that, single fistula found in 63 patients (61%) while multiple fistulas was found in 40 patients (38.9%).

The previous history of the studies patients shown that, there was 60 patients (58.2%) without previous history, 28 patients (32.4%) have drainage operation done under local or general anesthesia while the remaining 15 patients (19.4%) had previous operation.

The studied patients divided into three groups according to the surgical procedure done for them, first group, excision only in 45 patients and second group, excision and simple primary suture in 45 patients, while excision and W plasty procedure done for the third group which include 13 patient only, as shown in table II.

Postoperative complications include, wound infection (10) patients, wound dehiscence (9) patients, skin necrosis (4) patient, haematoma (4) patients and recurrence (8) patients, with relation to the three surgical procedures shown in table III.

Statistical analysis done to compare between the three surgical modalities

with regarding to operating time, hospital stay and post operative complications by using ANOVA test shown in table three. The relations between operating time and hospital stay shown in figure (1).

Table II. Type of present operation

Group	Procedure	No (%)
I	Excision alone	45 (43.6)
II	Excision and simple closure	45 (43.6)
III	Excision and w plasty	13 (12.8)
Total	-	103 (100.0)

Comparisons between the three surgical methods with regarding to operating time and hospital stay are shown in table IV.

Table IV. Comparison between the three surgical modalities

Parameter	Excision alone n (%)	Excision n& simple closure n (%)	Excision & w plasty n (%)
Complications	Wound dehiscence	-	7
	Wound infection	5	4
	Skin necrosis	-	3
	Haematoma	1	2
	Recurrence	4	3
	Total No. of complication	9	18
Operative time	< 30 min	44	12
	≥ 30 min	1	33
Hospital stay	1-3 days	40	25
	4-8 days	5	20

Table 4. Hospital stay and operative time according to the type of surgical procedure.

Surgical procedure	Hospital stay (days) X ± SD	Operative time (min) X ± SD
Excision alone n=45	3.4± 0.92	13±4.7
Excision and simple closure n=45	3.4 ± 0.92	31±7
Excision and w plasty n=13	3.1 ± 1.4	25.6±13.9
P-value	< 0.001	< 0.001

Discussion

Sacrocoycegeal PN disease may take a variety of forms, a silent form, acute with abscess and chronic or acute form with fistula¹².

The onset of the disease is earlier in female than in male due to earlier occurrence of puberty in female based on association with sex hormone¹³, in present study majority of our female patients (88.9 %) presented in second and third decades of life which is different from previous report¹⁴, but 80 patients (77.5%) occur in the third and fourth decades of life which is similar to previous study¹⁵. The male to female ratio in the present study (3:1) was similar to previous report^{14,15}, although its higher (17:1) as well as lower (1.5:2:1) were also reported by others^{16,17,18}. The variation in the incidence of the disease between races were explained by differences in hair characteristics as kinking, medullation¹⁹ and by differences in the daily rate of hair growth²⁰.

There is clear relation between obesity and pilonidal sinus as shown in present study 55 patients (53.4%) they are overweight, which is explained by increase in sweating activity associated with buttock friction^{21,22} but other said that²³ obesity alone is not an important factor in the etiology of pilonidal sinus disease.

The main indication for surgery is purulent discharge and pain at sacrocoycegeal region (53.4%), (51.4%) respectively, which is similar to the previous report and probably that local trauma and over weight are the most important conditioning factors for the development pilonidal sinus disease²⁵. About 60 patients (58.2%) present for the first time and 28 patients (22%) they give a history of drainage of an acute

abscess under local or general anesthesia.

Despite surgical therapy dating back more than one century, management remains controversial and recent report have advocated different surgical approaches², but ideal treatment should avoid long hospital admission and assure a short time of healing, reduced number of complications and low risk of recurrence and minimal time off from work¹¹.

The post operative surgical complications (wound dehiscences, wound infection, skin necrosis, haematoma and recurrence) occur in 35 patients (39.9%) but it is (22%) in first group while it is (42%) which is a significant finding, also most patients (44) in first group spend less operative time in comparison with (33) patients have more operative time, the same finding regarding hospital stay also found.

Statistically observed that there is no significant differences in post operative complications regarding age, sex, but it have significant relation with B.M.I which are probably related to the anatomical status i.e. depth of the intergluteal groove, similar finding also observed by other²⁴.

There is a significant different in operative time and hospital stay with regarding to the types of surgical procedures and also there is a liner relation between operating time and hospital stay.

In conclusion, excision alone and leaving the wound to heal by secondary intention is safe and probably ideal because it takes less operative time and short hospital stay beside that associated with minimal complications. Also meticulous hygiene and shaving of present healing area as well as dietary regime to obese patients should be take in consideration to avoid recurrence.

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