E-ISSN: 2616-3470
P-ISSN: 2616-3462

www.surgeryscience.com
2020; 4(1): 454-457
Received: 22-11-2019
Accepted: 25-12-2019

Duraid Dawood Mahmood
Deportment of Surgery, Fallujah Teaching Hospital, Fallujah, Anbar, Iraq

Abdulhadi Meryud Abood
Deportment of Surgery, Fallujah Teaching Hospital, Fallujah, Anbar, Iraq

Corresponding Author:
Duraid Dawood Mahmood
Deportment of Surgery, Fallujah Teaching Hospital, Fallujah, Anbar, Iraq

Opened versus closed procedures in management of pilonidal sinus (P.M.S.)

Duraid Dawood Mahmood and Abdulhadi Meryud Abood

DOI: https://doi.org/10.33545/surgery.2020.v4.i1h.385

Abstract
Background: PNS is a common surgical disease and there are many methods of treatment such as wide excision of sinus and lay wound open to heal by granulation tissue (open), excision of a sinus with primary closure (closed), track debridement and excision or phenolization of epithelial pit and excision of PNS with primary closure using oblique incision.
Methods:
Setting: In Fallujah Teaching Hospital from Jan. 2017 to Dec. 2018.
Design: Prospective study.
These cases were chosen and divided into 2 groups: Group A: were treated by open procedure (31).
Group B: were treated by closed procedure (27).
The average period of follow up after completion of surgery was six months for both groups.
Results: In group A symptomatic improvement occurs in 26 (83.8%) of patients and the duration of healing was about 45 days, 5 (16.2%) patients were delayed healing while recurrence were 4 (12.9%).
In group B symptomatic improvement occurs in 19 (73.7%) of patients and the duration of healing was about 2 weeks. 8 (26.3%) patients were delayed healing while recurrence were 6 (22.2%).
Conclusions: From this study we find that there is no ideal treatment of pilonidal sinus according to:
1. Meantime of healing.
2. Delay healing.
3. Recurrence.

Keywords: Pilonidal sinus Pilonidal cavity.

Introduction
A pilonidal sinus is formed when granulation lined pilonidal cavity drains via a sinus tract which open away from midline as an area of proud granulation onto the skin. During an interval between episodes of inflamma-tion, the diagnosis can be confirmed by identifying the epithelialized follicle opening within the natal cleft 4-8cm cephalad from anus.
The sinus track then runs cephalad from this midline opening in roughly 93% of cases 1 and can usually be palpated as area indurations deep to the sacral skin. Not infrequently there may be more than one epithelialized opening within the natal cleft but the laterally situated granulation lined opening is single in cases have not undergone surgery [2]
Sacro-coccygeal pilonidal sinus is well known for its association with military personnel [3] one of its commoner synonyms Jeep seat disease's. Today PNS are widely accepted to be acquired abnormalities [4, 5].
As a result of the droinge of a hair follicle [6]. That ruptured in the subcutaneous fat, producing acute or chronic in Flomaton [7], resulting in an abscess or tract [5].
The invasion of the follicle occurs through the expendable orifice of the vestigial scent gland [7] and is a result of inflammation and rupture in the subcutaneous fat of the follicle [7, 8].
However more recent prospective study of 49 infected postoperative wounds isolated aerobic bacteria in 43% of cases [11]. Treatment of pilonidal infection should be with broad spectrum antibiotics.

The Aim of the Study
This prospective study aim to compare between wide excision and laying wound open to heal by granulation tissue, and excision of the sinus with primary closure in:
1. Mean time of healing.

2. Delay healing.
3. Recurrence.

Patients and Methods

58 cases of PNS were included in the study from (Jan. 2017-Dec. 2018). All the patients treated at Fallujah Teaching Hospital.

They were categorized into 2 groups, group 1 (31) patients were treated by opened procedure, group 2 (27) patients were treated by closed procedure.

Both groups admitted to the hospital, history was taken and general examination was done. All patients had shaved their hairs in and around the natal cleft one day before operation and treated under general anesthesia.

1. PNS excision -healing by open granulation: Indications:

1. History of more than one year.
2. Second hand surgery.
3. Infected sinus.

This procedure was done to group 1.

At operation patient put in prone position with a buttock haled a part by strapping. A probe was passed in every sinus to delineate the extent of disease.

Treatment was by conservative excision of the skin to include the sinuses openings deep to the sacral fascia and total excision of the tracks to leave well-shaped wound.

This was packed with gauze soaked in proflavin paraffin emulsion for 3 days. Then dressing changed twice daily, the patient were trained to bath their wound and change their dressing twice daily after one week patient discharged to the clinic for weekly observation and removal of the dressing. When the wound fill and contracted the paraffin gauze replaced by dry gauze- poorly drainage packet in the wound were opened up with forceps. The patient re-attend the clinic regularly until their wound healed or until were referred for further surgery.

All patients were given

1. Analgesia (paracetamol 500mg orally on need).
2. Antibiotic: Amoxicillin 500mg 8 hourly for one week, this > antibiotic has broad spectrum activity.
3. Patients were advised to change their work.

2. PNS excision-healing by primary closure: Indications:

1. Newly diagnosed patients with history less than one year and single sinus opening.
2. Minimal patient visit after operation only for 2 weeks.

At operation the patient was put in prone position with a buttock healed a part by strapping. A probe was passed in every sinus to delineate the extent of disease. An elliptical block of tissue extending down to sacral fascia was removed.

Its long axis was in the natal cleft and its lateral border was over 1 cm distant from all sinuses. Specimens were examined at the time to confirm that the excision had been adequate. Redivac drain was brought out 2 cm lateral to the lower end of the wound. Closure was with interrupted No.1 monofilament Nylon stitches passed from a point 1 cm wide of the skin edges down to and including the sacral fascia. These were tied over a gauze roll after the skin had been sutured with interrupted 2/0 mer silk. No attempt was made to occlude the wound from perineal region. Administration of tetracycline 250 mg 4 times daily started immediately after operation and continued for 1 week and paracetamol on need.

The drain was removed when collection was under 10 ml in 24hr and patient discharged the other day, seen weekly intervals until complete healing.

Results

It is randomized prospective study which was carried out in the surgical department in Fallujah Teaching Hospitals during the period of Jan. 20017 - Dec. 2018.

58 patients included 51 (88%) men and 7 (12%) women. The men age ranges from 18-35 years, and women ages' ranges from 16-30 years.

They were categorized into 2 groups; group A, 31 (53.4%) patients were treated with excision of the sinus and laid wound open and group B 27 (46.4%) patients were treated with primary closure.

The results of group A we found that the mean time to healing is 45 days and 5 (16.2%) patients were delayed healing while recurrence were 4 (12.9%) with 6 month follow up.

The results of group B we found that the mean time to healing is 2 weeks and 8 (26.3%) patients were delayed healing and the recurrence 6 (22.2%) patients.

Table 1: Clinical data on 58 patients in two sexes

	Male	Female
No. of patients	51	7
Age (years)	18-35	16-30
Range Mean	25	20
History		
< 6 months	20	1
> 2 years	34	3
> 2 years	13	3
Previous treatment	14	2
Drainage Radical	6	-

Table 2: Comparison between two groups after sur- gical treatment.

Method	No. of cases	Mean time of healing/day	Delay-healing time	Recurrence
Group A (laying open)	31	45	5	4
Group B (primary closure)	27	14	8	6

Discussion

Pilonidal disease affects men [12, 13] between 16-25 years of age most often usually it is associated with obese 14, 15 and hirsute individuals who experience profuse sweat-ing and have sedan tarry life style [16, 17].

The term "delayed healing" was applied to those wounds not completely closed by 2 months (4).

In J Mark, K.G. Harding study (10) he consider the main cause of delayed healing and recurrence was infection by anaerobic bacteria particularly.

He said that the term "recurrence" is frequently used incorrectly, as the majority of sinuses requiring re-operation result from delayed healing due to inade- quate excision.

In our study we saw that the main causes of delayed healing and recurrence:

1. Infection.
2. Patients with longer histories more than 2 years.
3. Poor hygiene patients' and patient whom doesn't regulate their visits at weekly intervals to outpa- tients and clinics.

Causes of recurrence

The recurrence rate at one year following open methods of treatment is less than after primary closure (2) possi- ble reason for this:

1. The midline scar is more susceptible to subsequent hair perforation than after healing by granulation.
2. The broader scar after healing by granulation re- duces local hair growth.
3. There are fewer hair follicles near the midline to produce further folliculitis.
4. The broader scar resulting from secondary healing flattens the natal cleft to reduce buttock friction.

Table 3, 4: Show us comparison between our studies in both groups with the other previous studies by the two methods. We use to treat patients from 1967-1987 year

References	Year	No. of cases	Mean time of healing (day)	Recurrence (%)
Goodall	1961	15	-	0
Notaras	1970	45	42	9
Sood *et al*.	1975	23	29	11
Ortiz *et al*.	1977	14	38	11
Houston	1977	25	31	<20
Weinstein	1977	126	<60	
Wood *et al*.	1977	131	56	4
Britton *et al.*	1977	42	-	0
Eftaiha *et al.*	1977	175	42	-
Hodgson and Greenstein	1981	10	-	26
Thomson and Lee	1982	34	<60	14
Clothier and Haywood	1984	12	-	
McLaren	1984	18	42	-
Bissett and Isbister	1987	48	48	0

Table 4: Mean healing time, primary healing and recurrence following piolonidal sinus excision with primary closure

References	Year	No. of cases	Mean time of healing (day)	Failed primary healing (%)	Recurrence (%)
Leichtling	1967	11	14	9	0
Cherry	1968	15	14	-	-
Thomas	1968	57	-	-	12
Holm and Hutton	1970	50	<10	6	4
Foss	1970	90	17	11	<20
Notaras	1970	43	12	30	9
Schonk	1971	75	16	11	4
Tetirick	1971	15	-	8	0
Euangelous and Tiniakus	1974	34	10.5	12	-
Lamke *et al*.	1974	39	23	2	26
Uerbeck and Bender	1974	711	-	3.5	14
Sood *et al*.	1975	75	50	-	11
Kam	1976	36	<10	6	-
Bentiuegna and Procaio	1977	83	10	0	0
Britton *et al*.	1977	51	-	-	20
Zimmerman	1978	82	14	0	0
Rainbury and Southam	1982	27	<30	8	1
Clothier and Haywood	1984	24	-	-	37
McLaren	1984	14	11	-	12
Kronberg *et al*.	1986	33	14	-	15
Courtyney and Merlin	1986	81	12	-	13
Bissett and Isbister	1987	57	30	-	28

Conclusions

The results of our study indicates that the ideal treatment of pilonidal. Sinus should avoid hospital admission and general anesthesia while involving minimal inconvenience and time off work for the patient with high chance of cure and low recurrence rate.

So management of pilonidal sinus is frequently unsatisfactory.

Recommendations

There is no ideal method in management of pilonidal sinus that satisfy all requirement for ideal treatment quick healing, no hospital admission, minimal patient inconvenience and recurrence, so in group A more time for healing, more patient inconvenience and more work up by doctor and nurses but less recurrence; while group B quick healing, less work for patient and surgical staff and less patient inconvenience but increase percentage of delay healing and recurrence.

References

1. Notaras MJ. A review of three popular methods of treatment of post-anal pilonidal sinus disease. British Medical Journal of Surgery. 1970; 7:889-90.
2. Allen-Mersh TG. A review of pilonidal sinus: Finding the right track for treatment. British Medical Journal of Surgery. 1998; 77:123-132.
3. Peter Clothier. The natural history of the post-anal pilonidal sinus. Ann. Royal College of surgeons- England. 1984; 66:201-204.

4. King ES. The nature of the pilonidal sinus. Aust NZJ Surg. 1947, 182-192.
5. Patey DH, Scar ff RW. Pathology of postnatal pilonidal sinus; its beoring on treatment. Lancet. 1946; 2:484-486.
6. Bascom. Pilonidal disease: origin from follicles of hairs and results of folic b removal as treatment. Surgery. 1980; 87:567-572.
7. Bascom J. Pilonidal disease: long term results of follicle removal. Dis cotton Rectum. 1983; 26:800-807.
8. Bascom J, Bascom T. Failed pilonidal surgery: new paradigm and new operation leading to cures. Arch Surg. 2002; 137:1146-1151.
9. Richard M, Ramsbary, John, Southam A. Radical surgery for pilonidal sinus. Ann. Royal College of surgeons-England. 1982; 64:339-41.
10. Hodges RM. Pilonidal sinus. Boston Med Surge J. 1980; 103:485-586.
11. Sondenaa K, Nesvi K, Nesvi I, Anderson E *et al*. Bacteriology and complication of chronic pilonidal sinus treatment with excision and primary su- ture. Int J colorectal Dis. 1995; 10(3):161-66.
12. Karydokis GF. New approach to the problem of pilonidal sinus. Lancet. 1973; 2:1414-1415.
13. Clothier PR, Haywood IR. The natural history of the post anal (pilonidal) nisvs. Ann R coll Surg Engle. 1984; 66:201-203.
14. Bascom J. Surgical treatment of pilonidal disease. BMJ. 2008; 336:842-843.
15. Menzel T, Dorner A, Cramer J. [Excision and open wound treatment of pilonidal sinus. Rate of recurrence and duration of work incapacity]. Dtsch Med Wochenschr. 1997; 122:1447-1451.
16. Kronborg O, Christensen K, Zimmermann- Niel- sen C. Chronic pilonidal disease: a randomized trial with a complete 3 year follow-up. Br J Surg. 1985; 72:303-304.