

Treatment of recurrent pilonidal sinus by flap technique(Limberg flap)

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Abstract

Background: pilonidal sinus (PNS) is a chronic disease that mostly affects young adults. describes a hair-filled cavity in the subcutaneous fat of the post sacral intergluteal region, known as the natal cleft , its name arises from the Latin terms “pilus” and “nidus” meaning a nest of hair . PNS can be asymptomatic, or may be present as a recurrent abscess or as chronic inflamed cavity and local discharge from sinus or sinuses and local pain and discomfort .

Materials and Methods: retrospective study was done from (November 2017 to November 2018) at surgical department in Kirkuk General Hospital in 50 patients with recurrent PNS all will be treated with Limberg flap then follow up for one year this surgery done by excision of PNS till we reach fascia overlying sacrum inferiorly and laterally till we reach gluteal fascia and dissection was performed with electro cautery and reconstruction done by flap (Limberg .flap) from gluteal area

Results: in 50 patient with recurrent PNS we have 45 (90%) were male and 5 (10%) were female ,30 patient (60%) patients had a familial history of PNS and 42 patients(84%) with etiology-related risk factors to develop PNS then we divided them according first time surgery done either, by excision and primary closure 30 patient(60%) or excision and healing by granulation tissue and secondary intension 20patient (40%)

Discussion: pilonidal sinus not classified as dangerous condition but any patients with PNS live in non-comfortable state and may have complications such as abscess formation or discharging sinus even severe pain therefore Limberg flap is commonly used method to treat recurrent PNS and this good result with healing in short period also satisfactory results in long duration but this method with Sacrococcygeal area disfigure mentation as one long duration complications but less recurrence rates and short stay in hospital and better patient tolerability in this way if we compare it to all other methods even with surgical challenge to create a flap but it less wound infection, hematoma ,edema , wound separation if we compare it to other surgical techniques but fluid accumulation in close space under flap is one of important complications in this method and we decrease it by using a drain and putted in site until fluid drainage in area decreased to be less than 50 ml/day .

In this method recurrence rate in our study is 2% but reported recurrence rate for Limberg flap are from 0.8 to 2.7% if we compare to 12% recurrent rate in primary closure therefore we have very good recurrence rate

Conclusions: the approach for recurrent PNS should be differ from primary PNS flap reconstruction methods in treatment for recurrent PNS is very good and efficient method even with surgical challenge procedure to create flap, personal hygiene are the keystones for .preventing recurrence

Keywords: pilonidal sinus, recurrence, Limberg flap.

INTRODUCTION

Sacrococcygeal pilonidal sinus (PNS) is a chronic disease that mostly affects young adults. describes a hair-filled cavity in the subcutaneous fat of the post sacral intergluteal region, known as the natal cleft and this pathology was first described in 1833 but PNS usually occurs in healthy young men (Male/Female = 4-5/1)(1) and its arises from the Latin terms “pilus” and “nidus” meaning “a nest of hair.” (2)

Clinically, PNS in any patient may be asymptomatic or present as recurrent abscess or may be as inflamed cavity with local fluid discharge and variable discomfort(2,3)

PNS can be seen at any age groups although high incidence will be seen in second or third decades .

the incidence of PNS in the general population is about 26 cases per 100,000 people (0.026%)(4)

The PNS may present as chronic cutaneous infection or abscess with or without sinus or may be present as recurrent sinuses

This disease may classify as acquired disease but still not well defined it's etiopathogeny .

Many etiologic factors, like hirsutism, repeated local trauma, obesity with deep natal cleft and familial predisposition with smoking and lifestyle have been a role in it as sedentary one, all will be suggested as predisposing factors .(5)

There are many non-surgical or surgical methods describe for management PNS cases in all methods the wound healing of PNS depends many factors such as the stage of disease , medical conditions for patient, method of used to treat patient (medical/surgical line) ,also experience of the surgeon. When surgical way is chosen to treat PNS , all methods depend on total excision of the pilonidal cavity and its tracts(6). Then wounds left can be sutured (primary suture of wound) or we deal with it by creating a flap or we left wound open to healed by secondary intension.(7,8)

In this research we will representing retrospective study for recurrent pilonidal disease in 50 cases, all treated by surgical method with Limberg flap tech.

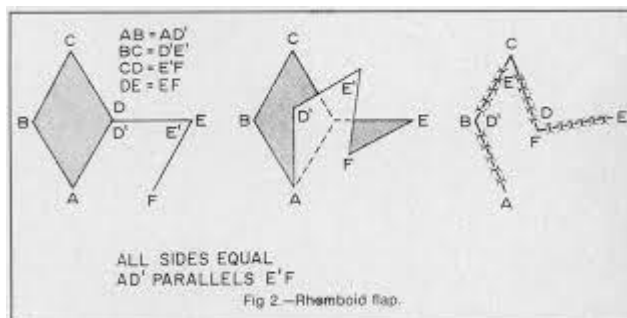
Materials and methods

The study was done from November 2017 to November 2018 at surgical department in Kirkuk General Hospital, A total of 50 patients with recurrent PNS all will be treated with Limberg flap then follow up for one year all patients undergo this surgery all consent them about this method and its complication and investigations done which include full blood test and ECG also echocardiography done to all patients.

Surgery: done to all patients under spinal or general anesthesia , in prone position the area exposed in intergluteal region and by adhesive tape , we do lateral traction of gluteus area from its lateral region then Sinuses with branching seen and marked by methylene blue injection into tract then remove of PNS completely done till we reach fascia overlying sacrum and laterally till we reach gluteal fascia and Dissection was performed with electro cautery and reconstruction it done by created by creating a flap from gluteal area (no matter from right or Left side) (9) as seen in fig 1 then transport it, to fill the defect then only skin suture with Prolene(2. 0) and put vacuum drain ,which done by a separate incision, about 2 cm away from the original incision and keep it till drainage from area decreased to be less than 50 ml/day as seen in picture(1 and 2). pictures taken after patient permission we need about 3to 5days to remove vacuum drain (10)

and all patient discharged on the same day of surgery and ask them not lie on their buttock for 5 days and stich remove after 15 days then full recovery after 21 days.

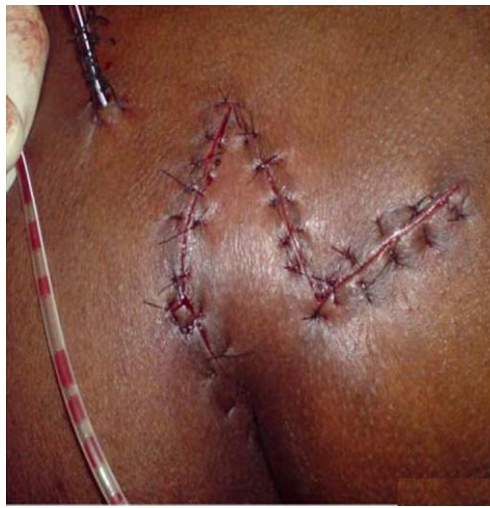
Fig1



Picture 1



Picture 2



Results

From the 50 selected patients with recurrent PNS, we have 45 (90%) were male and 5 (10%) were female. The average age was 25.3 years (interval between 18 and 42 years old).

30 patient (60%) with positive history in their family to PNS and 42 patients(84%) with risk factors to develop PNS as deep natal cleft ,hirsute body , obesity and with history such as local trauma and sedentary lifestyle.

we divided them according first time surgery done either, by excision and primary closure 30 patient(60%) or excision and healing by secondary intension 20patient (40%) .

Table (1) age distribution in both group

Age (yrs.)

Age (yrs.)	Primary closure group	Healing by secondary intension group
10 – 19	8(26.6%)	4(20%)
20 – 29	14(46.6%)	10(50%)
30-39	6(20%)	4(20%)
40-49	2(6.6%)	2(10%)
Total	30(100%)	20(100%)

Table 2 Sex distribution in both group

	Primary closure group	Healing by secondary intension group
Sex		
Male	10(22.3%)	35(77.7%)
Female	5(100%)	Non

Table 3

Clinical comparison, operative characteristics and complications .

<u>Variable</u>	<u>Primary closure group</u>	<u>Healing by secondary intension group</u>	<u>p-value</u>
<u>Site of recurrence</u>			
<u>Midline single</u>	<u>20</u>	<u>12</u>	
<u>Midline multiple</u>	<u>10</u>	<u>8</u>	
<u>Hirsute Nature</u>	<u>24</u>	<u>12</u>	
<u>Wound infection</u>	<u>1</u>	<u>2</u>	
<u>Flap edema</u>	<u>4</u>	<u>1</u>	
<u>Hematoma</u>	<u>2</u>	<u>1</u>	
<u>Partial wound dehiscence</u>	<u>3</u>	<u>1</u>	

<u>Variable</u>	<u>Primary closure group</u>	<u>Healing by secondary intension group</u>	<u>p-value</u>
<u>Flap necrosis</u>	<u>1</u>	<u>0</u>	
<u>Recurrence</u>	<u>1</u>	<u>0</u>	

Discussion

pilonidal sinus not classified as dangerous condition but any patients with PNS live in discomfort state and may have many complications such as abscess or discharging sinus even severe pain in area that interfere life quality . The PNS recurrence is most likely due to leave tract or tracts in first surgery or may be as wound infection or abscess , all will lead to new tract formation. dead tissue collection or debris in the cleft, sweating, friction, or even poor hygiene in intergluteal cleft all are predisposing factors for recurrence.(6).

PNS can be treated by many surgical ways but in all we have high risk for recurrence [11].

In Flap techniques we will get a flat intergluteal cleft with repair by tension-free flap and less hair in area also if we reduced sweating [9] all are good factor's to decrease recurrent rate .

Limberg flap is one of good method used to treat recurrent PNS and this method with good outcomes, healing in short times and good results for long time(12). Even Limberg flap may

cause disfigurement in the Sacrococcygeal region by creating a flap. This procedure may not be an appropriate for all patients as patient with extensive disease which required a big flap [12]. If we compare Limberg flap with other surgical techniques as in Shabbir et al we found it has less wound infection and recurrence rates, short hospital stay and better patient comfort when compared with excision and direct primary closure [13].

Patients treated with Limberg flap had short time to heal as seen by our results and better cosmetic results have been achieved by Limberg flap than seen Karydakis flap procedure which same result seen by Sit M et al (14) but Patients underwent Karydakis flap reported shorter healing time postoperatively than Limberg flap only reported by Can MF et al(15).

In flap method complications seen such as infection, collection of fluid, hematoma and separation of wound can noted as in all other surgical techniques . but fluid accumulation in close space under flap is one of important complications to this method and we decrease it by using a drain and putted in site until fluid drainage in area decreased to be less than 50 ml/day same result reported by Gurer et al. (16) they reported that fluid accumulation is reduced after the routine use of post-operative drains but Bessa (17) determined that the percentage of cases with fluid retention after drain placement was 2.4%. but in our study was 10% of patients with this complications which higher than other study.

The reported recurrence rate for Limberg flap are from 0.8 to 2.7% in our study only 2% which is similar or near to other results as Ertan et al.(18) reported recurrence rate of 2% same to as in comparison 12% in a primary closure .

Conclusions

The approach for recurrent PNS should be differ from primary PNS but risk factors in recurrence PNS unfortunately same in both therefore we must try to eliminated or

decrease factors that lead to increase chance PNS recurrence apart from the surgical approach that we use but flap reconstruction methods in treatment for recurrent PNS is very good and efficient method even with surgical challenge procedure to create flap , personal hygiene are the keystones for preventing recurrence and all patients must be educated about recurrence in this disease are cornerstone to avoid recurrence.

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