

Patient's Information Regarding Factors that Play Roles in the Occurrence of Pilonidal Sinus in Rania District

***Dr. Barzan Mohammed Mohammed Ameen, PhD**

****Dr. Zana Nasraldeen Mohedeen**

*** Lecturer/ School of Nursing/ University of Raporin**

**** Lecturer / University of Polytechnic/ Slemani**

Abstract:

Background: Pilonidal sinus (PNS) is a small cyst or abscess that occurs in the cleft at the top of the buttocks. Pilonidal sinus usually contains hair, dirt, and debris; it can cause severe pain and can often become infected. If it becomes infected, it may ooze pus and blood and have a foul odor.

Objective: The present study aims to describe Sociodemographic attributes of the patients with (PNS) in Rania District with factors that play role in the occurrence of this disease.

Methodology: Quantitative design a descriptive study was conducted at the General Hospital in Rania District from the February 1st, up to March 31st, 2014.

To achieve the objectives of the study, non-probability purposive sample of 30 patients who are diagnosed with (PNS) and who agreed to participate in this study.

The data were collected through the utilization of a constructed questionnaire based on extensive review of related literatures and studies; data was collected by interviewing the patients themselves. The content validity of the instrument was established through penal of five experts. Reliability of the instrument was determined with stability reliability, (test, re-test) approach, ($r = 0.82$). The data was analyzed by using descriptive and inferential statistical measures by using the statistical package of social science (SPSS) version 21.

Result: The study shows that half of the patients are male and the other half are female. Meanwhile, 30% of the study sample is students.

The results indicate that young adult group 21- 24 years old is more prone to have the PNS disease, and there is significant relationship between age group and residency area.

The study recommends to give proper information should be provided at the earliest, so that fundamental atmosphere must be established for the effective coordination between patients and health workers team to decrease prognosis of the disease.

Key wards: Factors, Pilonidal Sinus, Rania

Introduction:

Pilonidal sinus (PNS) is chronic inflammatory process of the skin in the cleavage between the buttocks (natal cleft). It is caused by keratin plug and debris clinically observed as a pit, having penetrated the dermis ⁽¹⁾. The term Pilonidal comes from a combination of Latin words meaning hair (*pilus*) and nest (*nidal*). Pilonidal sinus was first described by Hodges in 1880 ⁽²⁾.

In 1833, Herbert Mayo described a hair-containing sinus ⁽¹⁾, but it was not until 1880 that Hodge ⁽³⁾ suggested the term "Pilonidal" (Latin: *pilus* = hair and *nidus* = nest). By definition, a Pilonidal sinus is a sinus that contains hairs, mainly in the sacrococcygeal area and is due to favoring conditions like: The existence of a deep natal cleft and the presence of hair within the cleft, sweating, maceration, bacterial contamination, and penetration of hairs ⁽⁴⁾. In addition, certain effect exerted by the movement of the buttocks encourages loose dead hair to gain entry to the sinus ⁽⁵⁾. Pilonidal sinus disease was also branded as "Jeep disease" during the Second World War because of the high incidence among Jeep drivers ⁽⁶⁾.

The incidence of Pilonidal disease in the United State of American (USA) is about 26 per 100,000 populations. It occurs mostly in white males, at a ratio of about 3-4:1, typically in late teens to early twenties, decreasing after the age 25 and rarely occurs after 45 year of age ⁽⁷⁾. While the incidence of this disease in this area increase more than 30 per 400 operations which take place in the General Hospital in Rania District.

The origin of the problem is not well understood. In the past, PNS was thought to be a congenital condition. However, there is nearly a consensus that it is an acquired condition. PNS has high incidence in certain communities which can be explained by the different hair distribution and its growth pattern. The condition is less common in Asians and Africans than in Caucasians ⁽⁶⁾. Nevertheless, most of the investigators suggest the acquired theory of PNS. Certain factors may be in favor of the occurrence of PNS. These factors are hormonal, presence of hair, friction, sitting or driving for long periods and infection. The risk factors of PNS were found in one study to be sedentary occupation 44%, positive family history 38%, and obesity 50% and local irritation or trauma prior to onset of symptoms 34% ⁽⁴⁾.

(Akinci et al., 1999) have studied the incidence of certain etiological factors in soldiers with and without PNS. They found that family history; obesity; being the driver of a vehicle; and having folliculitis or a furuncle can be associated with the presence of PNS ⁽⁷⁾.

Harlak et al., 2010), suggested that hairy people who sit down for more than six hours a day and those who take a bath two or less times per week have an increased risk for PNS than those without these risk factors ⁽⁴⁾.

Hormonal factor was thought to be one of the factors that can play a role in the etiology of PNS. At puberty, androgens are secreted to enhance the development of the pilo-sebaceous glands, which coincides with the onset of PNS ⁽⁸⁾. The early presentation of PNS is the visible pit in the midline of the natal cleft. This is actually the microscopic appearance of enlarged hair follicles. The weight of the buttocks can cause stretching of the follicular openings ⁽⁹⁾.

It is explained by relatively high force of buttocks' weight applied over very small area of pilo-sebaceous follicle (about 1 mm²), over the sacro-coccygeal joint. All the movements and sitting for long time can amplify the force applied to this area. When the force applied reaches a critical level, this can cause rupture of the follicle base; the weakest part. The friction between buttocks is another factor added to this force which can help for sucking keratin and hair into the distended follicles ⁽¹⁰⁾.

It has been postulated for long time that hair follicles were the source of PNS ⁽¹¹⁾. Recently, studies have found that the specimens of excised lesions had the pits penetrating into the dermis but not all of them arose in hair follicles ⁽¹²⁾ Nevertheless, the hair has an important role in the development of inflammation. Sorts of treatments directed against hair follicles gave very good therapeutic effects.

Patients and Method:

Quantitative design and a descriptive approach study is conducted. Non probability of purposive sample of 30 patients who are admitted for operation in the General Hospital in Rania District agreed to be part of this study. The study starts from February 1st, until March 31st, 2014. A special questionnaire method is constructed for proper data collection based on extensive review of related literatures and studies with two parts. The first part is concerned with patients' demographical characteristics, while the second part is concerned with health information related to study sample. A pilot study is carried out for the period of February 1st to February 10th, 2014. Reliability is determined using stability reliability (Test – Retest approach). A panel of five experts is involved in the determination of the questionnaire content validity. The data is put on computer file and it is analyzed by using descriptive and inferential statistical measures by using the statistical package of social science (SPSS) version (21). The analyzed data is preformed through the following approaches: descriptive statistical data analysis approach, such as (frequency and percentage), and inferential data analysis approach, such as (Chi-Square).

Body mass index (BMI) for each patient is calculated based upon their height and weight [weight (kg) / height (m)]. Depending on the (BMI) range, 20–25.9, 26–29.9, and over 30, patients are classified as normal range, overweight, and obese, respectively.

The demographic characteristics of the patients are given in section 1 table. Also, general body characteristics are given in section 2 tables. While section 3 shows the relationship between demographic characteristic and patient's information.

Section I: demographic characteristic**Table (1). Distribution of demographic characteristics of the study sample (N= 30)**

Items	F	%
Age Groups		
17 – 20 years	6	20
21 – 24 years	9	30
25 – 29 years	8	26.6
30 – 34 years	2	6.7
35 – 39 years	2	6.7
40 – 44 years	3	10
Gender		
Male	15	50%
Female	15	50%
Total	30	100%
Occupation		
Soldiers	6	20%
Homemakers	7	23.33%
Students	9	30%
Self-jobs	2	6.67%
Employments	6	20%
Total	30	100%
Education level		
Illiterate	2	6.7%
Literate	1	3.3%
Primary	5	16.7%
Secondary	2	6.7%
High school	10	33.3%
Institute	4	13.3%
College and above	6	20%
Residency		
Urban	28	93.3
Rural	2	6.7

This table reveals that most of the group that are affected by the disease are people between 21 – 29 years old (30% + 26.6%= 56.6%). Concerning gender, both female and male are affected by the diseases equally. Meanwhile, (30%) of the patients are student and (23.33) are homemakers. Speaking of their educational level (33.3%) of them has a high school degree, and the minority of them (3.3%) is literate. On the other hand, the majority of the study sample was from urban areas (93.3%).

Section 2: general body characteristics**Table (2). Distribution of body mass index of the study sample (N=30)**

Body mass index (BMI)	F	%
Normal weight	11	36.7
Overweight	3	10
Obese	16	53.3
Total	30	100%

This table describes the body mass index of the study sample. Most of them (53.3%) are obese, while the minority of them (10%) is overweight, and (36.3%) have normal weight.

Table (3): Distribution of skin hair and skin color (N=30)

Skin color	F	%
Brown	23	76.7
White	5	16.7
Dark	2	6.6
Total	30	100%
Hair type	F	%
Thin	12	40
Hairy	18	60
Total	30	100%

This table shows that the majority of the study samples have brown skin color (76.6%). And (60%) of the study sample have hairy skin.

Table (4): information of study sample (30 patients) regarding causes of Pilonidal sinus

No	Items	Poor (1)		Accept (2)		Good (3)		M.S	Severity
		F	%	F	%	F	%		
1	Daily body hygiene	20	66.68	5	16.66	5	16.66	1.5	L
2	The area's hygiene after toilet use	28	93.33	2	6.67	0	0	1.06	L
3	Drying area after toilet use	25	83.34	4	13.33	1	3.33	1.2	L
4	Removing of hair	30	100	0	0	0	0	1.0	L
5	Usage of cleaning products	30	100	0	0	0	0	1.0	L
6	Daily hours sitting	18	60	7	23.33	5	16.67	1.56	L
7	Complication of disease	30	100	0	0	0	0	1.0	L
8	Daily exercises	23	76.68	5	16.66	2	6.66	1.3	L
9	Visiting hospital or physicians when appearance of any abnormalities in this area like (etching, burns sensation, bad odor or secretion)	21	70	7	23.34	1	3.33	1.26	L

This table demonstrates the mean of the score for study group, which shows low severity of all items regarding Pilonidal sinus disease information.

L = 1- 1.66

M = 1.67 – 2.32

H = 2.33 – 3

Section 3: Relationship between Sociodemographic data and study sample information

Table (5): Relationship between the age of study sample (30) and information

Items	Fail (1)	Accept (2)	Good (3)	Total
17 – 20 years	5	2	0	7
21 – 24 years	9	0	0	9
25 – 29 years	5	6	0	11
30 – 34 years	2	0	0	2
35 – 39 years	2	0	0	2
40 – 44 years	2	2	0	4
Total	25	10	0	35
X ² obs= 34.84 df=10 X ² crit= 18.307 p ≤ 0.05				

This table shows that there is a significant relationship between age and information at (P) value (≤ 0.05).

Table (6): Relationship between the gender of the study sample and their information

Items	Fail (1)	Accept (2)	Good (3)	Total
Male	12	6	0	18
Female	13	4	0	17
Total	25	10	0	35
X ² obse = 0.41 df = 2 X ² crit = 5.991 p ≤ 0.05				

This table shows that there is no significant relationship between the gender of the study sample and their information at (P) value (≤ 0.05).

Table (7): Relationship between occupation of the study sample and their information

Items	Fail (1)	Accept (2)	Good (3)	Total
Peshmarga	4	4	0	8
House wife	6	2	0	8
Students	8	2	0	10
Self job	2	0	0	2
Employment	5	2	0	7
Total	25	10	0	35
X ² obse = 3.01187 df = 8 X ² crit = 15.507 p ≤ 0.05				

This table shows that there is no significant relationship between occupation of the study sample and their information at (P) value (≤ 0.05).

Table (8): Relationship between educational level of the study sample and their information

Items	Fail (1)	Accept (2)	Good (3)	Total
Illiterate	2	0	0	2
Read and write	1	0	0	1
Primary	2	6	0	8
Secondary	2	0	0	2
High school	10	0	0	10
Institute	4	0	0	4
College and above	4	4	0	8
Total	25	10	0	35
X ² obse = 18.4 df = 12 X ² crit = 21.026 p \leq 0.05				

This table shows that there is no significant relationship between education level of the sample and their information at (P) value (≤ 0.05).

Table (9): Relationship between residency of sample (30) and knowledge

Items	Fail (1)	Accept (2)	Good (3)	Total
City	24	8	0	32
Village	1	2	0	3
Total	25	10	0	35
X ² obse = 2.33 df = 2 X ² crit = 5.991 p \leq 0.05				

This table shows there is no significant relationship between residency and information at (P) value (≤ 0.05).

Discussion:

In the present study, most of the subjects 30% are young, between (21 – 24 years) old. Pilonidal sinus disease (PNS) is classically described as a disease that affects mostly the young (ibid). Both gender represent are affected by the disease equally. 30% of the sample is a student which contradicts other studies that suggests females in this area do not care with their personal hygiene, especially in buttocks area. In usual studies, males are affected more frequently than females by a ratio of 3 to 1. This is probably due to their more hirsute nature^(13, 14) but regarding this present study female ratio was high because of hairy nature of skin in this area, sitting for long time, and lack of information about etiology and risk factor of the disease like removing hair and personal hygiene. 33.3% of the sample has finished high school, and 93.3% live in urban residency area, which is represented in table (1) because of stereotypes, and shaming, this issue is stigmatized and patients feel ashamed for having their disease checked.

Table (2) reveals that 53.3% are obese and 10% are overweight. Obesity is an independent risk factor of the disease and is associated with postoperative complication and recurrence⁽¹⁵⁾ Regardless of BMI, sacrococcygeal subcutaneous fat thickness is associated with Pilonidal disease⁽¹⁶⁾.

Table (3) shows that the majority of the study sample have brown skin color (76.7%), and (60%) have hairy skin. This result matches Scott's, et al., study, which states the exact etiologic factors are not clear, but some known risk factors include the presence of excessive hair, obesity, long periods of sitting, local irritation, family history, and inadequate personal hygiene⁽¹⁷⁾.

In table (4), the study found that the entire study sample has little information about this disease regarding many causes like their culture and norms, embarrassment and shaming.

Regarding section (3) of relationship between Sociodemographic data and sample information, there is significant relationship between age and information. Table 5 shows the increase in the patients' information regarding this disease by experiences and getting information from different resource. The study shows no significant association at P value 0.05 between patients' information with gender, occupation, and level of education which are depicted in tables (6, 7, and 8) respectively. This is because of their cultures, values, and traditions. Also, there is significant relationship between residency and information table (9), which revealed that these patients in the city would like to seek more information more than those in the village.

Conclusions:

The study concludes the followings:

1. Most of the sample study is composed of people of young age.
2. The majority of the patients are obese and overweight.
3. Most of them have finished high school education, and the majority of them are urban residents.
4. A significant relationship has been depicted between patients with some of their Sociodemographic attributes such as age and residency.
5. There is no significant relationship between patient's information with gender, level of education, and occupation.

Recommendations:

The findings of the present study recommend the followings:

1. Proper information should be provided at the earliest, so that fundamental atmosphere can be created for the effective coordination between patients and health worker team to decrease prognosis of the disease.
2. Use of multimedia (TV, Radio, posters ...) to provide enough information about the disease.
3. Provide booklets and brochures that contain pictures and information to inform people about the disease for better chances of early diagnosis.

References

1. Sondena K, Pollard ML, (1995) Histology of chronic Pilonidal sinus. *APMIS (Acta Pathologica, Microbiologica, et Immunologica Scandinavica)* 103(4): 267-72
2. Hodge, R.M. (1880) Pilonidal sinus. *Boston Medical and Surgical Journal*, 103, 485-486, 493, 544.
3. Hodge, R.M. (1880) Pilonidal sinus. *Boston Medical and Surgical Journal*, 103, 485-486,493,544. (Quoted from da Silva J.H)
4. Mahdy, T. (2008) surgical treatment of the Pilonidal disease: Primary closure of flap reconstruction after excision. *Diseases of the Colon & Rectum*, 51, 1816-1822.
5. Goldberg, S.M., Gordon, P.H. and Nivatongs, S. (1980) Essentials of Anorectal Surgery. JB Lippincott, Philadelphia, 128-133.
6. Mentis, O., Bagci, M., Bilgin, T., Coskun, I., Ozgul, O. and Ozdemir, M. (2006) Management of Pilonidal sinus disease with oblique excision and primary closure results of 493 patients. *Diseases of the Colon & Rectum*, **49**, 104-108.
7. Doll D, Friederichs J, Dettmann H, et al. (2008) Time and rate of sinus formation in Pilonidal sinus disease. *Int J Colorectal Dis.*;2 3(4):359-64.).
8. Berry DP. (1992) Pilonidal sinus disease. *J Wound Care*; 1(3): 29-32.
9. Akinci OF, Bozer M, Uzunköy A, Düzgün SA, Coşkun A. (1999) Incidence and etiological factors in Pilonidal sinus among Turkish soldiers. *Eur J Surg.*; 165(4): 339-42.
10. Quoted from da Silva J.H. (2000) Pilonidal cyst: Cause and treatment. *Diseases of the Colon & Rectum*, 43, 1146-1156.
11. Harlak A, Mentis O, Kilic S, Coskun K, Duman K, Yilmaz F. (2010) Sacrococcygeal Pilonidal disease: analysis of previously proposed risk factors. *Clinics (Sao Paulo).*; 65(2): 125-31.
12. Price ML, Griffiths WAD. (1985) Normal body hair: a review. *Clin Exp Dermatol*; 10: 87-97.
13. Bascom JU. (1981) Pilonidal disease: correcting over treatment and under treatment. *Contemporary Surg*; 18: 13-28.
14. Lineaweaver WC, Brunson MB, Smith JF, Franzini DA, Rumley TO. (1984) squamous carcinoma arising in a Pilonidal sinus. *J Surg Oncol*; 27(4): 39-42.
15. Sondeno, K., Andersen, E., Nesvik, I. and Spreide, J.A. (1995) Patient characteristics and symptoms in chronic Pilonidal sinus disease. *International Journal of Colo- rectal Disease*, 10, 39-42.
16. Chassin's operative, 2014, strategy in General surgery, fourth edition, Carol E.H.Scott-Conner Editor Roy J.and Lucille A. Carver college of Medicine.
17. Arda I S, Guney LH, Sevmis S, Hicsonmez A , 2005, High body mass index as a possible risk factor for Pilonidal sinus disease in adolescents . *World J Surg*.

الخلاصة

الخلفية: الناسور العصصي عبارة عن كيس متقيح يحدث في المنطقة العصصية اسفل الظهر، وعادة ماتحوي على شعر وقيح وخراج والتي تسبب الاما والتهابات في المنطقة واذا ما التهابت ينتج عنها تسريب قيحي دموي وعن رائحة كريهة.

الاهداف: تهدف الدراسة الى وصف عينة الدراسة من النواحي الديموغرافية ومعلومات المرضى حول مسببات المرض.

منهجية البحث: دراسة وصفية بتصميم كمي اجريت في مستشفى رانية العام من الاول من شباط 2014 ولغاية الحادي والثلاثون من اذار من نفس العام، وشملت عينة البحث عينة غرضية (غير احتمالية) من (30) مريضا من المشخصين بمرض الناسور العصصي والذين وافقوا على المشاركة في هذه الدراسة. تم جمع المعلومات من خلال اسلوب المقابلة للمضى استمارة الاستبانة. وتم تحليل البيانات بواسطة الاحصاء الوصفي للبيانات المستقاة من عينة البحث وباستخدام الحقيبة الإحصائية للعلوم الاجتماعية الاصدار (21). وتم اختبار مصداقية استمارة الاستبانة من خلال (5) من الخبراء لهذا الغرض. وكانت درجة الثبات فيها ($r=0.82$) بطريقة الاختبار القبلي والبعدي

النتائج: اظهرت الدراسة ان نصف عدد المرضى هن من النساء (50%)، و(30%) منهم من فئة الطلبة. وكذلك وجدت ان الفئة العمرية (21 – 24) هم الاكثر تعرضا لهذا المرض. وكذلك وجدت بان هناك علاقة بين المعلومات والعمر ومكان المعيشة.

التوصيات: اوصت الدراسة بتزويد الفئات المرشحة للاصابة بهذا المرض بالمعلومات الكافية من خلال الكتيبات او وسائل الاعلام.

بوغته

پيشينه: ناسورى كلينجك بريتييه له كيسىكى پر له كيم كه له ناوچهى كلينجك له پشتى مرؤف روودهدات، وه زور جار پيكهاتى موو و كيم وپيسى تيدا كودهبهته وه دهبيتته هوئى نازار وهه وكردن كه دواتر دهرهجه و بوئى ناخوشى لى دروست دهبى.

ئامانج: ئامانجى تويزينه وه كه بو وهسفرندنى تويزى تويزينه وه كه له رووى ديموگرافى و زانىارى نه خوش بهرامبهه هوكارى نه خوشيه كه.

ميتولوجى: تويزينه وه كه وهسفييه به شيوه برى، له نه خوشخانهى گشتى رانيه نه نجام دراوه له يهكى شوباتى 2014 تا 31ى نازارى 2014، سه كترى تويزينه وه كه مه به ستدار بوو (نا هه رهمه كى) پيكهاتبوو له (30) نه خوش كه دياريكرا بوون به توشبوون به وه خوشيه وئاماده بيان دهربرى به به شدارى كردن لهم تويزينه وه به. زانىارى به كانيش به راپرسيه كه ئاماده كرابوو بو ئه وه مه به سته وه به شيوه جاوپي كه وتن وگفتوگو كردن پر كرايه وه. دواتر به شيوه ئامارى وهسفى داتاكان شيكرانه وه به به كارهيئانى ئامارى زانستى كوومه لايه تى فيرژنى (21). ههروه ها بو راستى و دروستى راپرسيه كه راده ستى (5) كه سى شاره زا وپسپور كرا بو ئه وه مه به سته. وه به به كارهيئانى تاقى كردنه وه پيش وهخت و دوا وهخت كه به پلهى ($r=0.82$) بو دهرچوو.

ئهنجام: تويزينه وه كه نه وهى دهرخست كه نيوهى نه خوشه كان له ره گه زى ميينه بوون (50%)، ههروه ها (30%) يان خويندكار بوون، وه ته مهنى نيوان 21 تا 24 زورترين كه س بوون كه توشى ئه م نه خوشيه بوون. تويزينه وه كه ش نه وهى دهرخست كه په يوه ندى ههيه له نيوان زانىارى وته مهن وشوينى نيسته جي بوون.

پيشنيزه كان: تويزينه وه كه پيشنيزى پيدانى په رتوكيكي ئاماده كراو به زانىارى و هوكارى ئه وه جوړه نه خشه يه بدرى به وه كه سانهى كه نه گهرى توشبوونى ئه وه جوړه نه خوشيه يان ههيه يان پيدانى زانىارى به به كارهيئانى ميدياكان.