ORIGINAL ARTICLE

Pilonidal disease: The changing trend in incidence based on occupation

Muhammad Naeem, Waleed Mabood, Muhammad Imran, Imtiaz Khattak, Munir Ahmad

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MTI Khyber Teaching Hospital, Peshawar
M Naeem
W Mabood
M Imran
M Ahmad

DHQ Teaching Hospital, KDA Kohat
I Khattak

Correspondence:
Dr Waleed Mabood
Resident Surgeon, Surgical D ward, MTI, KTH, Peshawar.
Phone:(+92)334-9096991
E-mail: waleed.mabood13@gmail.com

Abstract:

Introduction: Pilonidal sinus disease is one of the most commonly encountered diseases in people with sedentary lifestyle. It's most common occurrence is in natal cleft while interdigital web spaces are the other common sites. It has been reported to have 0.7% incidence in general population mainly affecting male patients of age 16-25 years. There has been a trend in its risk factors which include obesity, occupation with prolong sitting times, personal hygiene, family history and grading of hairiness. Our study focused on the occupational risk factor which is seen mostly in people of IT professionals and gamers. This study will help us know the incidence of PND in this subset group and would aim at its prevention in the said group

Objectives: To evaluate the changing trend in incidence of pilonidal disease based on occupation

Material and methods: This descriptive study was carried out over 53 patients. After written informed consent, all consecutive patients who presented to surgical OPD with a complaint of pain in the natal cleft and subsequent diagnosis of PND on clinical examination by consultant surgeon and detailed history taken by Trainee Medical Officer. All patient had their weight and height measured for BMI documentation.

Results: A total of 53 patients were diagnosed PND in surgical OPD in the last 2 years. All patients were male with a mean age of 21.04±2.43. The mean BMI was 24.6±2.2 with a range of 15.2-34.6. Most of the patients belonged to a group of BMI less than 25. Only 06% with BMI greater than 30 (obese), 15% patients had a BMI 25-30. 32% were IT professionals, 29% were related to sales industry, 23% were related to security services, 12% were drivers, 02 % were technicians, 1% educationalists and 1% was unemployed. Time spent seated per day was higher for the occupations of IT professionals and gamers, 64% said that they spent more than 6 hours per day on being seated. 23% patients had a positive family history of pilonidal disease.

Conclusion: Our study conclusively found that patients related to occupations which require prolong sitting time and who have moderate to excessive hair in a natal clefts and baths less than 2 times per week are susceptible to developing PND.

Keywords: Pilonidal disease, occupational disease, IT professionals, gamers, hygiene, obesity, prolonged siting time

Introduction:

Pilonidal sinus is one of the commonly seen conditions involving the natal cleft of young, hairy, obese male with sedentary job.[1] The term pilonidal disease was first introduced by Hodges in the year 1880, while in the year 1833 Herbert Mayo used the term "Hair containing sinus".[2] The most common site for pilonidal disease is the natal cleft. Other uncommon sites include inter digital clefts of barbers.[3] The disease affects about 0.7% of the general population mainly men at the age of 16-25 years.[3] It is well recog-

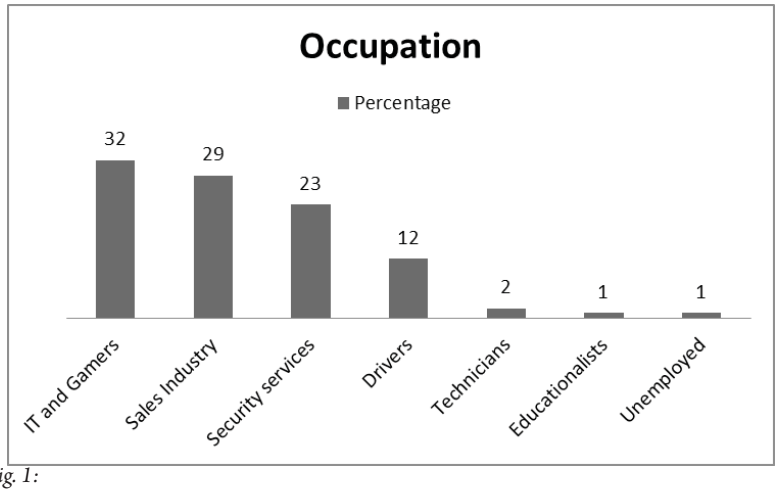

Fig. 1:

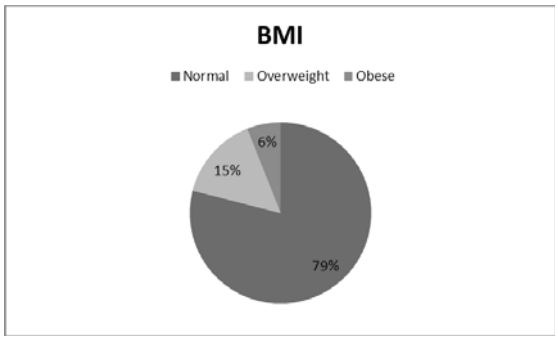

Fig. 2:

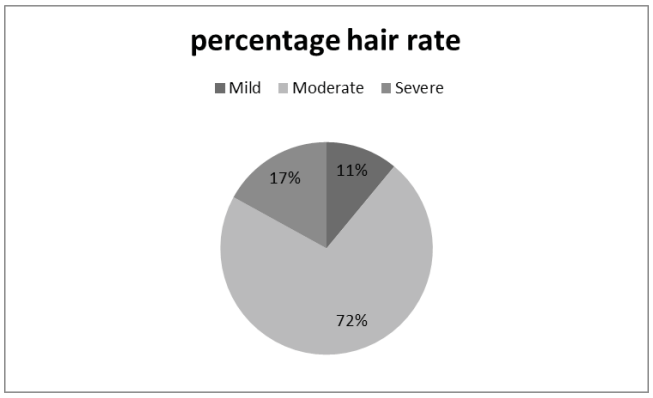

Fig. 3:

nized that the disease starts with the piercing of fallen hair into the skin resulting in chronic sinus formation. The problem can be successfully managed with surgical excision.[4] There are multiple treatment options for the treatment of pilonidal disease.[5] All the available treatment options are free of life threatening complications but still they are associated with a high complication rate in the form of wound infection and recurrence.[6] This disease of the natal cleft when infected forms an abscess with a draining sinus or a fistula which is usually flushed with skin.[2] This disease grew in popularity during the World War 2 by having a high incidence among the motorized division of the army commonly referred to as "jeep's disease" in that era.[2] In the subsequent generations all over the world, prolonged conflict with armies suffered from this disease.[7] Case in point is that prolonged sitting down was identified as the main culprit for this disease.[4,7–10] Among the new age, patients we have now a subset in our population of avid computer enthusiasts with the rise of computer age especially the gaming era.[11–13] On average, a young teenager spends about 60% of their time in front of a computer screen.[14] In recent years, the age limit for the gaming subgroup has increased to include adults of the age group up to 35 years.[15] In addition to this gaming group, we have another class of individuals who while not engaged in active gaming habit, have varied interests in computer science either professionally or as a hobby.[16–18] This is due to the fact that the society has increasingly being reliant on new technology and the job sectors had expanded to include computer science professionals as a must have in every industry.[16] So by and large, almost 70 to 80% of all professionals do engage in computer related desk tasks on daily basis.[16] These computer terminals/desks have become the jeeps of 21st century. We now have an army of computer professionals who spent an average of 4-6 hours continuously staring at a computer screen.[18] There was a need for a study which conclusively enunciates the incidence of PND in the sub-group of computer professionals and gaming enthusiasts.

Materials and Methods:

This was an observational study conducted in the department of surgery Khyber teaching hospital after approval from the ethical board and research committee of the hospital from April 2017 to April 2019, 2 years in duration. All consecutive patients who presented to surgical OPD meeting the inclusion criteria which included males only aged 15-45 years complaint of pain in the natal cleft and subsequent diagnosis of PND made on clinical examination. All patients were examined by a consultant surgeon with a com-

plete history taken by the trainee medical officer in the OPD. The history form was made to get demographics of occupation and hygiene practices, family history, time spent per day on a seat and computer related hobby i.e. gaming. All patient had their weight and height measured for BMI documentation. On clinical examination, a note was made of the percentage of the grade of hair presence in the natal cleft and graded as mild, moderate and severe. Strict exclusion criteria were followed to control co-founders and bias in study results. All data was entered in SPSS 20.0 and data analysis done subsequently. A p-value of less than 0.05 was taken as significant

Results:

A total of 53 patients were diagnosed as PND in surgical OPD in the last 2 years. All patients were male with a mean age of 21.04±2.43. The mean BMI was 24.6±2.2 with a range of 15.2-34.6. Most of the patients belonged to a group of BMI less than 25. Only 06% with BMI greater than 30 (obese), 15% patients had a BMI 25-30 (overweight) (figure-2). Based on occupation, 32% were IT professionals and gamers, 29% were related to sales industry, 23% were related to security services, 12% were drivers, 02 % were technicians, 1% educationalists and 1% was unemployed (figure-1). Time spent seated per day was higher for the occupations of IT professionals and gamers, 64% said that they spent more than 6 hours per day being seated. Percentage hair rate was a subjective scale with mild hair in only 11% of the patients. While the majority 72% patients had moderate hair while 17% were extremely hairy (figure-3) The hygiene practices on interview included number of baths per week with mean number of bath per week was 1.76±0.32 for all the patients with a range of 1-3 baths per week. 23% patients had a positive family history of pilonidal disease. Interestingly, 9% patients who were gamers had average gaming time of more than 8 hours with BMI greater than 25 and 1 bath per week.

Discussion:

Pilonidal disease gained its popularity in the army hospitals among the soldiers who usually belonged to motorized divisions or engineering core.[7] The problem with this disease was that disease model could not be evaluated based on community data due to the low incidence rates.[4] This disease when it was first described in the early 1930s has to this day fail to reach a full description due to an incomplete picture of etiology.[19] The disease was hypothesized to occur due to a suction mechanism of loose hair in the natal cleft described by Patey and Scarff in 1946.[20] Later on in the early 80s, Bascom hypothesized: "Only the bones get up when people stand up. Sacrum has to stick onto and pull up skin fat and muscles to move the buttocks. This pulling process produces a vacuum affect all over the gluteal region. Hair enters the pit in case of a minor folliculitis as a result of a vacuum produced by the movement of the gluteal region".[21] The leading man on pilonidal disease in 20th century was Karydakis.[22] During his clinical course and experience of 35 years while dealing with this disease, he developed the most comprehensive probable etio-pathogenesis of this disease.[23] He named 3-main factors called the invader, the force and the vulnerability. The invader being the loose hair, the force causing insertion(vacuum)/bumps and the susceptibility of the natal cleft skin.[23] Among all the theories of etiology, hair has always been the main culprit, the invader according to Karydakis. Infection of the clefts between fingers has also been reported among hair dressers termed "barber's hair sinus".[24] In our study population, 89% had hairy natal clefts proving a significant correlation for PND development. Harlak et. al had proposed 9.23 for higher risk due to hairy natal clefts.[25] Our scale for how much hairy is the natal cleft; was based on a subjective assessment which could not be reliably called an objective assessment. There is a need for a simpler tool/scale which could be used in routine practice. It has been hypothesized before to describe the etiology of PND that hygiene plays a role in its development.[8,10] The hypothesis being that loose hair increase in number over time and a frequent bath can mitigate this accumulation in the natal cleft. Among our study subjects, the

mean number of baths per week was 1.76% with a range of 1-3 baths per week which showed a slightly poor hygiene practice among the patient population. This correlates with Harlak et. al's study finding which increases risk of PND by 6.33 times for those subjects who take 2 or less baths per week.[25] Despite this, the hygiene practices namely bathing and cleaning of the natal cleft cannot be conclusively called as a causative agent as hygiene practices are purely subjective reporting and cannot be reliably captured. This may require a large community based study to elucidate this as an etiological factor.

Some occupations predispose to unhealthy environment and practices.[26,27] In our study, we collected multiple occupation titles among which a few stood out with a higher incidence of 64% patients who sit at their desks for more than 6 hours a day. The PND has classically been related to jeep drivers in world war 2 due to prolonged journeys and bumpy rides leading to loose hair and bumping motion as a driving force.[2] Prolong sitting time was a significant causative finding in our study (64%) which included IT professionals(29%), sales industry (15%), drivers(11%), gaming enthusiasts(09%). This break down of occupation shows that gaming enthusiasts, IT professionals and drivers respectively have a higher risk of developing PND. Harlak et al found in his study that prolong sitting greater than 6 hours increases the chances of acquiring PND by 4.3 times.[25]

In addition to occupation, we found that IT professionals and gaming enthusiasts had a mean BMI 26.6±1.3 which showed a propensity towards development of PND in our study group. High BMI has been related to increasing risk of PND and its complications pre-operatively as well as post operatively.[4,8,10,25]

It has also been proposed that PND may have a genetic underline and patient with a positive family history could have an underlying genetic predisposition.[28] This can be due to the fact that hair distribution and sweat gland distribution is genetic in nature. In our study subjects, 23% patients had a positive family history of PND compare to 12% found by Doll et. al.[28]

Conclusion:

Our study conclusively found that patients related to occupations which require prolong sitting time particularly those related to IT profession and gamers who have moderate to excessive hair in a natal cleft and baths less than 2 times per week are susceptible to developing PND.

Conflict of interest: None

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Role and contribution of authors:

Dr Muhammad Naeem, collected the data and did the initial write up

Dr Waleed Mabood, collected the references also helped in introduction writing.

Dr Muhammad Imran, helped in collecting the data and helped in discussion writing

Dr Imtiaz Khattak, helped in collecting the data, tabulating the results and also helped in result writing.

Dr Munir Ahmad, critically review the article and made final changes.

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