

ORIGINAL RESEARCH

Assessment of etiological factors in umbilical pilonidal sinus

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ABSTRACT

Background: Pilonidal sinus (PS) is a chronic inflammatory disease which is characterized by a granulomatous reaction to fragments of hair shaft penetrating epidermis from the cutaneous surface. The present study was conducted to assess etiological factors in umbilical pilonidal sinus.

Materials & Methods: 58 cases of umbilical pilonidal sinus of both genders were enrolled. Patients were put in group I and healthy subjects in group II (control group). Parameters such as body mass index, profession, skin colour, personal history of PS, family history of PS, how frequently they take a bath, and whether they wear tight clothes and use belt.

Results: Out of 58 patients, males were 38 and females were 20. The mean BMI (Kg/m²) was 24.1 and 26.4, skin colour was dark in 28 and 32, brown in 13 and 10, blond in 10 and 9 and white in 7 and 7. Frequency of taking baths was less than twice a week in 34 and 40 and more than twice a week in 24 and 18. Familial history was seen in 6 and personal history in 3 patients. Belts were used by 35 and 40 and wearing tight clothes seen in 42 and 26 in group I and II respectively. The difference was significant ($P < 0.05$).

Conclusion: Common etiological factors were familial history, personal history, wearing tight clothes and belts etc.

Key words: Familial history, Pilonidal sinus, Belts

INTRODUCTION

Pilonidal sinus (PS) is a chronic inflammatory disease which is characterized by a granulomatous reaction to fragments of hair shaft penetrating epidermis from the cutaneous surface.¹ This disease is a well-known and has been described by Mayo as far back as 1833 as a hair-containing cyst located just below the coccyx.² However pilonidal disease of umbilicus is very rare and Patey and Williams were the first to describe the umbilical pilonidal disease in 1956. Treatment of umbilical pilonidal disease ranges from conservative non-surgical treatment to a more aggressive approach such as total excision of the umbilicus followed by delayed reconstruction.³

PS occurs in many areas of the body such as web of fingers, penis shaft, sacrococcygeal area and navel.⁴ Patients with PS complain of pain, purulent discharge, swelling and scaling of the perisinus region. PS was originally thought to be of congenital origin, but the presence of interdigital pilonidal sinus in barbers suggests that it may be acquired.⁵ The mechanism of PS formation was first described as hair movement from the surrounding skin under frictional impact, which may puncture the skin. It can be diagnosed with a careful examination, in

which hairs can be seen deep in the umbilicus and usually protrude from a small sinus.⁶The present study was conducted to assess etiological factors in umbilical pilonidal sinus.

MATERIALS & METHODS

The present study comprised of 58 cases of umbilical pilonidal sinus of both genders. All patients gave their written consent for active participation in the study.

Data such as name, age, gender etc. was recorded. Patients were put in group I and healthy subjects in group II (control group). Parameters such as body mass index, profession, skin colour, personal history of PS, family history of PS, how frequently they take a bath, and whether they wear tight clothes and use belt was recorded. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table I Distribution of patients

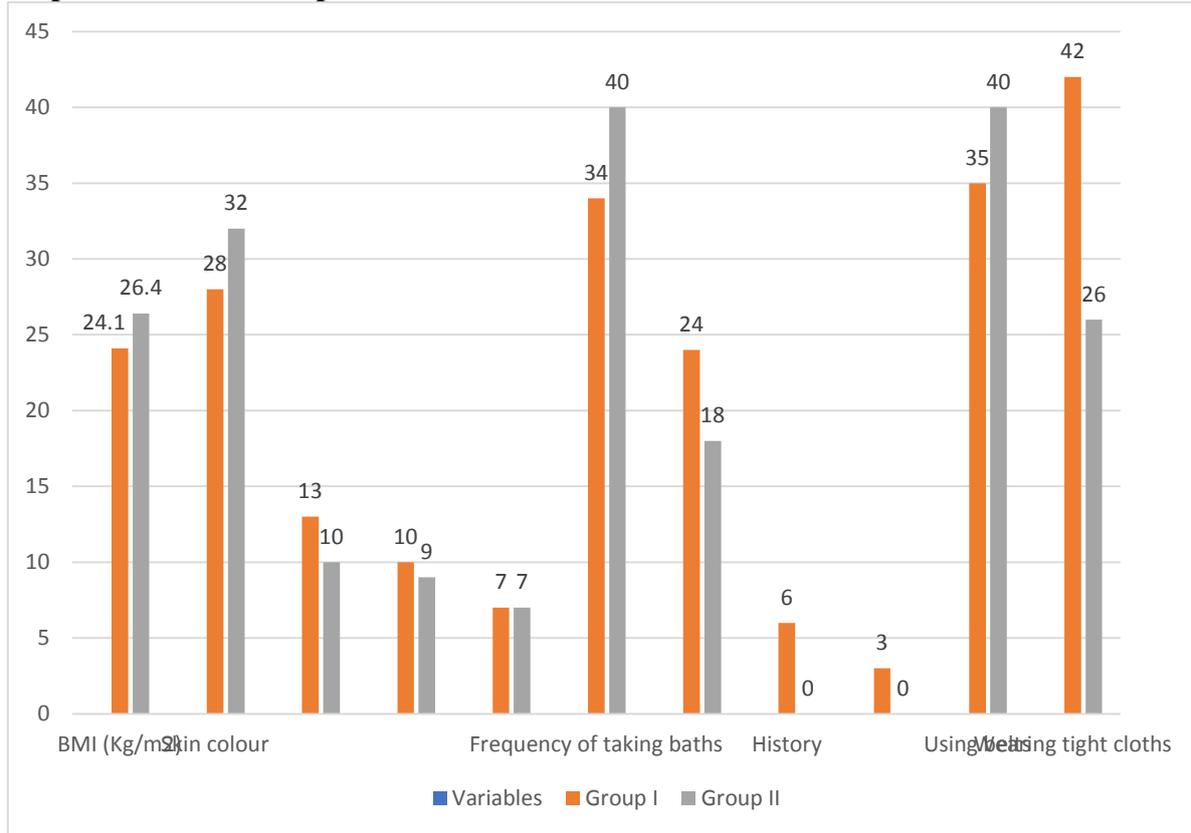
Total- 58		
Gender	Males	Females
Number	38	20

Table I shows that out of 58 patients, males were 38 and females were 20.

Table II Assessment of parameters

Parameters	Variables	Group I	Group II	P value
BMI (Kg/m ²)		24.1	26.4	0.92
Skin colour	Dark	28	32	0.05
	Brown	13	10	
	Blond	10	9	
	White	7	7	
Frequency of taking baths	Less than twice a week	34	40	0.05
	More than twice a week	24	18	
History	Familial	6	0	0.01
	Personal	3	0	
Using belts		35	40	0.82
Wearing tight cloths		42	26	

Table II, graph I shows that mean BMI (Kg/m²) was 24.1 and 26.4, skin colour was dark in 28 and 32, brown in 13 and 10, blond in 10 and 9 and white in 7 and 7. Frequency of taking baths was less than twice a week in 34 and 40 and more than twice a week in 24 and 18. Familial history was seen in 6 and personal history in 3 patients. Belts were used by 35 and 40 and wearing tight cloths seen in 42 and 26 in group I and II respectively. The difference was significant (P< 0.05).

Graph I Assessment of parameters

DISCUSSION

Pilonidal sinus disease is a common surgical disorder. The word, pilonidal, means nest of hair and includes the etymological roots (Latin) of pilus (a hair) and nidus (nest).^{7,8} The disease generally occurs in the sacrococcygeal region but has also been reported in other locations in which an anatomical cleft facilitates an accumulation of hair, including the axilla, between the breasts, the perineum, and the penile shaft, or in spaces between the fingers (in particular, in the case of barbers).⁹ A negative pressure is created during body movements at the abovementioned sites, leading to penetration of the hair shafts into the skin with a resultant foreign body reaction and development of a sinus lined by granulation tissue. An umbilical pilonidal sinus is the rarest variant accounting for only up to 0.6% of cases^{10,11}. The present study was conducted to assess etiological factors in umbilical pilonidal sinus.

We found that out of 58 patients, males were 38 and females were 20. Coskun et al¹² investigated factors leading to the development of umbilical pilonidal sinus (UPS). 31 patients with UPS and 100 consecutive volunteer outpatient were administered questionnaire which included questions on age, sex, profession, body mass index (BMI), skin colour, hirsute status, frequency of taking baths, personal history of pilonidal sinus (PS), familial history of PS, and whether –they wear tight clothes and whether they use belt. The results obtained from two groups were compared. UPS is one of the PS group diseases and involves umbilical region. There was statistically significant difference between the patient and control groups.

We found that mean BMI (Kg/m²) was 24.1 and 26.4, skin colour was dark in 28 and 32, brown in 13 and 10, blond in 10 and 9 and white in 7 and 7. Frequency of taking baths was less than twice a week in 34 and 40 and more than twice a week in 24 and 18. Familial history was seen in 6 and personal history in 3 patients. Belts were used by 35 and 40 and wearing tight cloths seen in 42 and 26 in group I and II respectively. Pitarch et al¹³ reported a

case in a 28-year-old man who came with inflammation and suppuration in his navel that had commenced some 2 months previously. Meticulous examination revealed a sinus tract from which a number of hair fragments were extracted. The patient, who was hirsute and whose weight was appropriate for his height, had been shaving his body with a razor since about 4 months previously. The removal of the hairs from the cavity alleviated the symptoms, and no recurrence was evident 6 months later.

Diagnosis is clinical and based on the detection of hairs nesting deep within the navel. Pathology reveals a foreign body granuloma, with an epithelium lined tract leading to an area of fibrosis and granulation tissue enveloping the hair fragments.¹⁴ This entity should be included in the differential diagnosis of umbilical lesions, such as, for example, epidermal cysts, umbilical hernias, pyogenic granulomas, endometriosis, omphalomesenteric duct remnants, urachal anomalies, and metastatic tumors. Among all PS, UPS is an acquired disease and a combination of factors accounts for their formation. A synonym for pilonidal sinus is pilonidal granuloma. The histopathological appearance of the lesion is characteristic of a foreign body granuloma. An epithelial-lined sinus tract leads to an area of fibrosis and granulation tissue surrounding hair shafts.¹⁵ These histopathological findings are similar to those of, sacrococcygeal pilonidal sinus.

The limitation the study is small sample size.

CONCLUSION

Authors found that common etiological factors were familial history, personal history, wearing tight cloths and belts etc.

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