



Obesity and Hirsutism on the Development of Pilonidal Sinus Disease in Women

KEYWORDS

Pilonidal sinus disease, obesity, hirsutism

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ABSTRACT

Pilonidal sinus is a common health problem that usually has an acquired etiology. The exact etiology of pilonidal sinus disease is still debated.

The aim of this study is to assess the effect of obesity and hirsutism on the development of pilonidal sinus disease in women. Fifty-nine female patients were enrolled in the study and the data were collected prospectively. The patients were categorized as obese, overweight and normal weight according to their body mass index. For hirsutism hairiness was assessed by the Ferriman and Gallwey score.

The median age of the patients was 19,4±5,9 years. The median body mass index (BMI) was 26,7±3,4 kg/m² and 17 (28%), 35 (59%), and 7 (13%) patients were categorized as normal, overweight, and obese, respectively. The median FGS score was 11,5± 1,8. 42 (71%) patients had moderate and 17 (29%) patients had mild hirsutism.

These results suggest that high BMI and hirsutism scores are also risk factors for the development of PSD.

Introduction:

Pilonidal sinus is a common health problem that usually has an acquired etiology and is mainly encountered in young people (1). This is consistent with the clinical observation that pilonidal sinus patients are often hirsute and that PSD rarely occurs in populations with less body hair (1).

Weight gain has been identified as a risk factor for the development of PSD (6). Sex hormones produced more in obesity are known to affect pilosebaceous gland, which coincides with the earliest onset of pilonidal disease (1-3).

Body mass index (BMI) was used as an objective indicator to define the patients' status as normal weight, overweight or obese (5,6).

Hirsutism is broadly defined as excessive hairiness, but the common clinical use of the term refers to women with excess growth of terminal hair in a male pattern. In this sense, hirsutism is one of the most common endocrine disorders, affecting approximately 10% of women in the United States. The most widely accepted method of quantitation for hirsutism is the Ferriman and Gallwey scale (FGS) (8,9).

The aim of this study is to assess the effect of obesity and hirsutism on the development of PSD in women.

Patients and Methods:

Fifty-nine female patients with pilonidal disease treated at our clinic were enrolled in the study. Data related to the demographic characteristics, occupation, BMI, Ferriman and Gallwey score, symptoms, anesthesia type, operation type, and early postoperative complications were collected prospectively.

Patients were categorized as obese (BMI ≥30), overweight (BMI range 25–29,9) or normal weight (BMI range 18,5–

24,9).

Hairiness was categorized for hirsutism by using the FGS scale. In this approach, the hair growth is assessed in each one of 11 androgen-sensitive areas. The grade for each area ranges from 0 (no terminal hair) to 4 (frankly virile). The body areas used to grade hirsutism are the upper lip, chin, chest, leg, thigh, upper arm, fore arm, upper back, lower back, upper abdomen, and lower abdomen. Areas such as the axilla and pubis are not included in the assessment because terminal hair grows in these areas in women with normal androgen levels as well.

The total score correlates roughly with the elevation of androgen levels. According to the FGS scoring system, the patients were categorized as no hirsutism (0-5), mild hirsutism (6-9), moderate hirsutism (10-14), and severe hirsutism (18-36).

First-generation cephalosporins were given thirty minutes before the surgery for antibiotic prophylaxis.

Results:

The median age of the patients was 19,4±5,9 years (range 18- 32 years). Thirty-two patients were student (54%), 9 patients were not working (15%), 4 patients were nurse (8%) and 14 patients had other occupations (23%) (Fig 1).

The median height of the patients was 1,6±0,1 m (range 1,50–1,75). The median weight was 71,3± 7,3 kg (range 61–95). The median body mass index (BMI) was 26,7±3,4 kg/m² (range 21,9–42,2). According to the BMI; 17 (28%), 35 (59%), and 7 (13%) patients were categorized as normal, overweight, and obese, respectively (Fig 2).

The median FGS score was 11,5±1,8 (range 8–14). According to the FGS scores 42 (71%) patients had moderate and 17 (29%) patients had mild hirsutism.

The symptoms observed were discharge in 30 (51%) patients, swelling in 22 (37%), and pain in 7 (12%) patients. Fifteen (25%) patients had abscess formation as the first symptom. These patients were obese with moderate hirsutism scores.

Fifty-seven patients were operated under spinal anesthesia and only 2 were operated under general anesthesia.

Forty-seven patients were treated with primary closure, 11 patients were treated with limberg flap, and 1 patient was treated with marsupialization.

Pathological findings were cystic cavity with chronic granulation tissue and foreign body giant cells describing PSD.

Ten patients developed mild wound infection and superficial infection. One patient developed wound dehiscence in the early postoperative period. These eleven patients were obese and had moderate hirsutism scores.

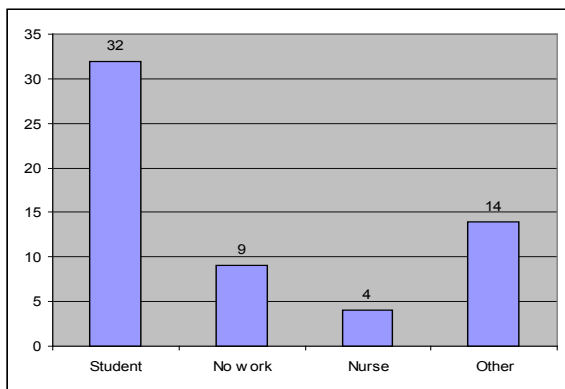


Figure 1. The occupational status of the patients.

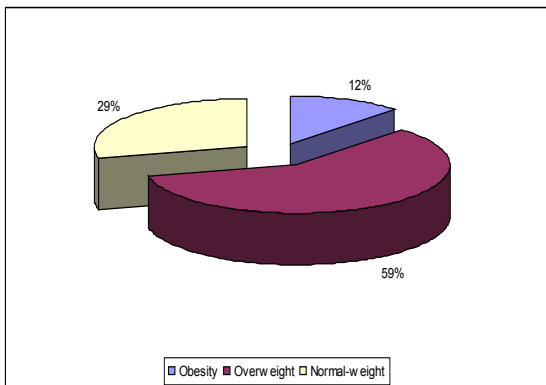


Figure 2. The body mass index of the patients.

Discussion

PSD was first described by Hodges in 1980 (11). PSD infections and chronic pilonidal sinuses typically occur in the midline of the sacrococcygeal skin of young people (1). Although the exact pathogenesis of PSD remains elusive and controversial, hair seems to play a central role in the process of infection and in the perpetuation of granulation tissue in sinuses.

This is consistent with the clinical observation that pilonidal sinus patients are often hairy and that PSD rarely occurs in populations with less body hair. Main factors in the etiopathogenesis of pilonidal disease are the abrasions formed in the intergluteal groove by physical activities such as walking, followed by migration and penetration of hair follicles into the natal cleft (4). Karydakos attributed this process to hair follicles, factors forcing their migration, and availability of the penetration area (4).

PSD is uncommon in women although its incidence is unknown. The affected girls were younger than the boys, likely because of the earlier onset of puberty in females (13). Sex hormones first produced at puberty are known to affect the pilosebaceous glands, which coincides with the earliest onset of PSD (14)

As noted above, obesity has been suspected as a risk factor for the development of PSD in adults (6). To our knowledge, no study has investigated the relation between the body weight and hirsutism, and the development of PSD in women. BMI is used to assess being underweight or overweight. The FGS is used to assess the status of hirsutism (8,9). In the 59 cases studied, the BMIs of 42 patients (71,2%) fell under either overweight or obese categories. In addition, the FGS of 59 patients (100%) indicated mild or moderate hirsutism. These findings are evidences of the fact that high BMI and hirsutism are significant risk factors for the development of PSD in women.

All the patients, who had abscess formation, were overweight and had moderate hirsutism scores. Eleven patients developed wound infection and dehiscence; according to their BMI 2 patients were obese, 6 were overweight, and all of them had moderate hirsutism.

Conclusion

These results suggest that high BMI and hirsutism are risk factors for the development of PSD and postoperative complications of PSD in women. According to our experiences, we recommend cleaning or epilating the affected area and giving a dietary regimen to these patients before the operation.

REFERENCE

- Karydakos GE. New approach to the problem of pilonidal sinus. *Lancet* 1973;2:1414-5.
- DaSilva JH. Pilonidal cyst, cause and treatment. *Dis Colon Rectum* 2000;42:1146-56.
- Spivak H, Brooks HL, Nussbaum M, et al. Treatment of chronic pilonidal sinus. *Dis Colon Rectum* 1996;39: 1136-9.
- Sakr M, Habashi EH. The effect of obesity on the results of karydakos technique for the management of chronic pilonidal sinus. *Int J. Colorectal Dis* 2003; 18:36-39
- Hammer LD, Kremer HC, Wilson DM, et al. Standardized percentile curves of body-mass index for children and adolescents. *Am. J. Dis. Child.* 1991;145:259- 263
- Arda S, Sevmis S et al. High Body Mass Index as a Possible Risk Factor for Pilonidal Sinus Disease in Adolescents. *World J.Surg.*29;469- 471 (2005)
- Ferriman DM, Gallwey JD. Clinical assessment of body hair growth in women. *J Clin Endocrinol* 1961;21:1440-1447
- Hassa et al. The hirsutism scoring system should be population specific. *Fertility and Sterility* Vol.84, No.3, September 2005
- Hodges RM. Pilonidal sinus. *Boston Med.Surg. J.*1880;103:485- 586
- Serour F, Somekh E, Krutman B, et al. Excision with primary closure and suction drainage for pilonidal sinus in adolescent patients. *Pediatr. Surg. Int.* 2002;18:159- 161
- Price ML, Griffiths WAD. Normal body hair: a review. *Clin. Exp. Dermatol* 1985;10:87-97