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Original Article

Predisposing factors for failure of conservative treatment in umbilical pilonidal sinus: A clinical experience

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Abstract

Aim: Pilonidal sinus is a chronic inflammatory disease that occurs in the sacrococcygeal region; but also occurs in the umbilical region. Conservative and surgical treatment methods have been used for management of umbilical pilonidal sinus. Aim of this study was to evaluate the risk factors for failure of conservative treatment.

Materials and Methods: Between June 2016 and March 2018, 16 patients diagnosed with umbilical pilonidal sinus in our clinic were evaluated retrospectively. The demographical and clinical data, interventions, complications and follow-up results of the patients were recorded.

Results: All of 16 patients initially treated conservatively. After conservative treatment, pilonidal sinus excision was performed to 7 (43.75%) patients; five (31.25%) of that patients had no regression of symptoms and two (12.5%) of them had recurrence. Personal history of umbilical pilonidal sinus, dark skin color, deep navel, and poor personal hygiene were found as predisposing factors for failure of conservative treatment.

Conclusion: Although there is no consensus in the treatment of umbilical pilonidal sinus; the first treatment approach should be conservative. It should be kept in mind response to conservative management could be poor in patients with the predisposing factors.

Keywords: Pilonidal sinus; umbilical region; conservative treatment.

INTRODUCTION

The pilonidal sinus is a chronic inflammatory disease characterized by a granulomatous reaction to the hair follicle entering the epidermis from the cutaneous surface. Pilonidal sinus was first described by Hodges in 1830 (1). The first case of umbilical pilonidal sinus (UPS) was reported by Patey and Williams in 1956 (2).

Although the pilonidal sinus is most commonly seen in the sacrococcygeal region, it can also be seen in the axilla, interdigital areas of hand and foot, suprapubic region, perineum and umbilicus (3). Although the pathogenesis of UPS is not known exactly, some experts suggest that it is an acquired disease (4,5). The predisposing factors for UPS disease, which is claimed to be an acquired disease; include young age, male gender, excessive hairiness, a deep navel and poor personal hygiene (3). There is no consensus on treatment methods. There are various treatment modalities ranging from conservative treatment to umbilectomy in the literature (6-8).

The aim of this study was to evaluate the risk factors for failure of conservative treatment in UPS disease.

MATERIAL and METHODS

In the General Surgery Clinic of Hakkari State Hospital; the databases between June 2016 and March 2018 were scanned and patients who treated with the diagnosis of UPS were identified. Identified cases were evaluated retrospectively with regards to; age, sex, body mass index (BMI), skin color, hirsutism, deep navel, tight clothing, personal hygiene, occupation, personal history of pilonidal sinus disease, family history of pilonidal sinus disease, symptoms, applied interventions and recurrence (Table 1). All patients have been informed about the study and written informed consent was obtained. The study was conducted in accordance with the rules of the Declaration of Helsinki.

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Initial treatment of all patients was conservative. The conservative treatment was consist of removing the hair in the umbilical region and applying silver nitrate (Silver Nitrate Bar®; Aqua Medikal, Istanbul, Turkey) to the umbilical region. Amoxicillin + clavulanic acid (Augmentin®; GlaxoSmithKline, Turkey) treatment was given to the patients for 1 week. The patients were informed about the clothing and personal hygiene care. After conservative treatment; patients who had no regression of symptoms and had recurrence were treated surgically. Pilonidal sinus excision and umbilicus reconstruction were performed in the surgical treatment.

Statistical analysis

Statistical analyses of the data obtained in the study were made using the SPSS for Windows vn 22.0 (SPSS Inc., Chicago, IL, USA). Fisher chi-square test was used to compare results. A value of $p < 0.05$ was accepted as statistically significant.

RESULTS

Between June 2016 and March 2018, 16 patients were treated and followed up with the diagnosis of UPS in our clinic. Six (37.5%) of the patients were female and ten (62.5%) of them were male. The ages of the diagnosed patients ranged between 17 to 25; and the median age was 21.7. The median follow-up period was 12 months (10-15 months). Eleven (68.75%) of the patients were students, two (12.5%) were teachers and three (18.75%) were soldiers. Three (18.75%) of the patients had previously been diagnosed with pilonidal sinus and four (25%) patients had a pilonidal sinus disease history in their family. When BMI of the patients were evaluated, two (12.5%) patients were weak, 10 (62.5%) patients were normal and four (25%) patients were overweight. Nine (56.25%) of the patients had dark and 7 (43.75%) had brown skin color. Ten (62.5%) patients had hirsutism and six (37.5%) patients had deep navel. Twelve (75%) of the patients had the habit of wearing tight clothes. The personal hygiene was considered as poor, if the patients took shower less than three times per week. Eight (50%) of the patients had poor personal hygiene. The presenting complaints were discharge, pain and rubor in the umbilical region. The average duration of symptoms was seven (between 3-15 days) days.

After conservative treatment; five (31.25%) patients who had no regression of symptoms and two (12.5%) patients who had recurrence were treated surgically. There was no complication in the follow-up period after surgical treatment. When relation between response to conservative treatment and predisposing factors was evaluated, patients who has brown skin, shallow navel and good personal hygiene well responded to conservative treatment (p:0.034, p:0.001 and p:0.016, respectively). There was no statistically significant difference in response to conservative treatment in terms of sex, BMI, hirsutism, tight clothing, occupation and family history (Table 2).

DISCUSSION

Umbilical pilonidal sinus is a rare chronic inflammatory disease. In UPS disease, due to the development of a foreign body reaction to broken hair follicles entering the epidermis; many symptoms are seen in the umbilical region as bloody or purulent discharge, pain, edema, rubor and abscess. The disease is usually diagnosed by clinical findings. Laboratory and other imaging methods are helpful in the differential diagnosis of other diseases such as umbilical hernia, pyogenic granuloma, dermoid cyst, urachus and omphalomesenteric anomaly, umbilical endometriosis, benign and malignant neoplasms (9).

Eighty five percent of patients with UPS are between 10-30 years old (10).In this study, age of patients was between 17-25 years. The exact pathogenesis of UPS is unknown. Today, with the studies of Patey, Bascom and Karidakis; the opinion that UPS is a congenital disease has left the opinion that UPS is an acquired disease (11-13).

Various treatment modalities for UPS disease have been suggested but there is no consensus on treatment management. The reason of this is, UPS is a rare disease. The treatment method of UPS patients is determined according to clinical findings. Patients with asymptomatic UPS disease may be treated by removal of the hairs in the umbilical pit, cleaning the hair around the umbilical region, increasing hygiene and keeping the umbilicus dry. For the patients with symptomatic UPS, treatment method should apply by removal of the hairs in the umbilical pit, umbilical debridement and umbilical hygiene, avoid tight clothing and keeping the umbilicus dry. In their series of studies, Kareem et al. and Sarmast et al. concluded that conservative treatment should be the first and main treatment method for the treatment of umbilical pilonidal sinus (6,14). In this study, conservative treatment was applied as the initial treatment for patients with symptomatic UPS.

Abscess drainage should be performed in case of an abscess in the umbilical region. In case of no regression of symptoms with conservative treatment or recurrent UPS disease, surgical treatment should be applied (15,16). Fazeli et al. performed pilonidal sinus excision and umbilical reconstruction for 45 patients with UPS. Due to the no recurrence after surgical treatment and the patient's satisfaction of umbilical appearance; the pilonidal sinus excision and umbilical reconstruction techniques are concluded as effective and acceptable method (7). In this study, patients who had no regression with conservative treatment and had recurrence during the follow-up were also treated with pilonidal sinus excision and umbilical reconstruction.

As well as there are studies suggesting the conservative treatment as the initial treatment method in UPS, many other studies suggest surgical treatment. Kaplan M et al. compared the conservative and surgical treatment results of 84 patients diagnosed with UPS and found that surgical treatment was superior to conservative treatment (10).But in that paper, authors did not mention about risk factors

Table 1: Demographic and clinical datas

	Age	Sex	BMI	Skin color	Hirsutism	Deepnavel	Tightclothing	Hygiene	Occupation	Personal history	Family history	Initial Treatment	Regression of symptoms	Retreatment	Retreatment
Patient1	20	Male	24,9	Dark	Yes	Yes	Yes	Poor	Student	No	Yes	Conservative	No	No	Surgery
Patient 2	22	Male	25	Dark	Yes	Yes	Yes	Poor	Student	Yes	No	Conservative	No	No	Surgery
Patient 3	24	Male	23,7	Brown	Yes	No	No	Good	Teacher	No	No	Conservative	Yes	No	No
Patient 4	21	Male	23,9	Dark	Yes	Yes	Yes	Poor	Soldier	Yes	No	Conservative	No	No	Surgery
Patient 5	20	Male	19,8	Dark	Yes	Yes	No	Poor	Soldier	No	No	Conservative	No	No	Surgery
Patient 6	17	Female	17,7	Dark	Yes	No	Yes	Good	Student	No	No	Conservative	Yes	No	No
Patient 7	22	Female	19,5	Brown	No	No	Yes	Good	Student	No	Yes	Conservative	Yes	No	No
Patient 8	20	Female	17,9	Brown	No	No	Yes	Good	Student	No	No	Conservative	Yes	No	No
Patient 9	23	Male	24,5	Brown	No	No	Yes	Poor	Soldier	No	No	Conservative	Yes	No	No
Patient10	24	Male	25,7	Dark	Yes	Yes	Yes	Poor	Student	Yes	Yes	Conservative	No	No	Surgery
Patient11	22	Male	28,3	Dark	Yes	Yes	Yes	Poor	Student	No	No	Conservative	Yes	Yes	Surgery
Patient12	21	Female	20,9	Brown	No	No	Yes	Good	Student	No	Yes	Conservative	Yes	No	No
Patient13	23	Female	26	Dark	Yes	No	No	Poor	Student	No	No	Conservative	Yes	Yes	Surgery
Patient14	24	Male	24,3	Brown	No	No	Yes	Good	Teacher	No	No	Conservative	Yes	No	No
Patient15	25	Male	22,7	Brown	No	No	Yes	Good	Student	No	No	Conservative	Yes	No	No
Patient16	20	Female	20	Dark	Yes	No	No	Good	Student	No	No	Conservative	Yes	No	No

BMI: Body Mass Index

Table 2. The effects of predisposing factors on the treatment

	Conservativetreatment	Surgicaltreatment 7 (43.75%)	pvalue
Patient	16 (100%)	7 (43.75%)	
Median age	21.7	21.7	
Sex			
female	6 (37.5%)	1 (14.3%)	>0.05
male	10 (62.5%)	6 (85.7%)	
BMI			
Weak	2 (12.5%)	0	
Normal	10 (62.5%)	3 (42.85%)	0.589
Overweight	4 (25%)	4 (57.15%)	
Skin color			
Dark	9 (56.25%)	7 (100%)	0.034
Brown	7 (43.75%)	0	
Hirsutism	10 (62.5)	7 (100%)	0.05
Deepnavel	6 (37.5%)	6 (85.7%)	0.001
Tightclothing	12 (75%)	5 (71.4%)	>0.05
Hygiene			
Poor	8 (50%)	7 (100%)	0.016
Good	8 (50%)	0	
Occupation	11 (68.75%)	5 (71.4%)	
Student	2 (12.5%)	2 (28.6%)	>0.05
Soldier	3 (18.75%)	0	
Teacher			
Personal history	3 (18.75%)	3 (42.85%)	0.018
Family history	4 (25%)	2 (28.6%)	>0.05

BMI: Body Mass Index

for failure of conservative management. In current study, personal history of umbilical pilonidal sinus, dark skin color, deep navel, and poor personal hygiene were detected risk factors for failure of conservative management.

Predisposing factors, conservative and surgical managements of UPS were reported previously in literature (3,6,7,10,14) but to best of my knowledge , this is the first study that evaluated the risk factors for failure of conservative management. Retrospective design and small number of patients were limitations of this study.

CONCLUSION

Umbilical pilonidal sinus disease should be considered in young patients presenting with discharge, rubor or pain in umbilical region. Because of conservative treatment is an effective and easily applicable treatment method, it should be the initial treatment approach in UPS. However, in patients with the negative predisposing factors, surgical treatment could be applied.

Competing interests: The authors declare that they have no competing interest.
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