Original Article

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Relationship Between Toilet Type and Hemorrhoids

Tuvalet Tipi ve Hemoroid Arasındaki İlişki

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ABSTRACT

Objective: The aim of the study is to investigate the relationship between the development of hemorrhoid disease and toilet habits.

Methods: This cross-sectional study was conducted in the digestive endoscopy unit of the University of Health Sciences Turkey, Gaziosmanpaşa Training and Research Hospital between January 2022 and March 2022. Presence of constipation was evaluated according to Rome IV criteria and the patients were asked to fill out the short questionnaire after the procedure.

Results: There was a total of 142 patients in the study. The mean age was 53.6±11.8 years. The female to male ratio was 1.33. The seated toilet was reported by more than half of the patients (58.5%) as the preferred toilet type. Constipation was detected in 70 patients (49.3%). Hemorrhoidal disease was detected in 60 (42.3%) of the patients. We did not find a significant difference between hemorrhoid disease and the type of toilet at home, preferred toilet type and constipation (p>0.05). There were significantly more male patients with hemorrhoids (56.7% vs. 32.9%, p=0.008).

Conclusion: We concluded that there was no relationship between the preferred toilet type and hemorrhoid disease in the current study.

Keywords: Hemorrhoid, constipation, toilet type

ÖZ

Amaç: Çalışmanın amacı hemoroid hastalığının gelişimi ile tuvalet alışkanlıkları arasındaki ilişkiyi araştırmaktır.

Yöntemler: Bu kesitsel çalışma Sağlık Bilimleri Üniversitesi, Gaziosmanpaşa Eğitim ve Araştırma Hastanesi Sindirim Endoskopi Ünitesi'nde Ocak 2022 ile Mart 2022 tarihleri arasında yapıldı. Konstipasyon varlığı Roma IV kriterlerine göre değerlendirildi ve işlem sonrasında hastalardan kısa anketi doldurmaları istendi.

Bulgular: Çalışmaya toplam 142 hasta alındı. Ortalama yaş 53,6±11,8 yıldı. Kadın/erkek oranı 1,33 idi. Oturaklı tuvalet hastaların yarısından fazlası tarafından (%58,5) tercih edilen tuvalet tipi olarak bildirilmişti. Yetmiş hastada (%49,3) kabızlık saptandı. Hastaların 60'ında (%42,3) hemoroidal hastalık saptandı. Hemoroidal hastalık ile evdeki tuvalet tipi, tercih edilen tuvalet tipi ve kabızlık arasında anlamlı bir fark saptanmadı (p>0,05). Hemoroidli erkek hasta sayısı anlamlı olarak daha fazlaydı (%56,7'ye karşı %32,9, p=0,008).

Sonuç: Bu çalışmada tercih edilen tuvalet tipi ile hemoroid hastalığı arasında bir ilişki olmadığı sonucuna vardık.

Anahtar Sözcükler: Hemoroid, kabızlık, tuvalet tipi

Introduction

Hemorrhoid disease is the third most common gastrointestinal system disease diagnosed in outpatient visits to the doctor in the USA (1). Hemorrhoids are diagnosed in one-third of patients undergoing colonoscopy (2). It is predicted that the demand for hemorrhoid treatment will increase even more in the coming years (3).

Hemorrhoids are structures consisting of smooth muscle, connective tissue and vascular tissue that extend around the anal canal (4). Hemorrhoids are actually cushions that provide continence in healthy people (5). However, the concept of hemorrhoids is generally used for swollen blood bags and symptomatic hemorrhoid disease detected on examination, rather than a normal anatomical structure (4). The etiology of

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hemorrhoid disease is unclear (6). The most common view is that hemorrhoidal disease is caused by the hydrostatic pressure of the blood under the influence of gravity. The second opinion is that hemorrhoid disease occurs as a result of the reflection of arterial blood pressure in the anorectal region through the connections to the veins. Thirdly, it is thought that hemorrhoid disease occurs as a result of weakening of the anal mucosa due to recurrent irritation and inflammation (7).

Hemorrhoid disease is thought to be more common in developed countries, and it is assumed that this may be related to the low fiber diet and the use of seated toilets (8-10). It has been shown that the rectoanal angle is straightening in the squat posture (9), evacuation is easier and takes a shorter time (10). Turkey is a developing country between the West and the East. Both seated and squat toilets are used. According to our hypothesis, we think that hemorrhoids may be significantly less in those who have the habit of using squat toilets.

Methods

The study which was organized as a prospective cross-sectional study was approved by the local ethics committee.

Patients Selection

Consecutive outpatients who were admitted to University of Health Sciences Turkey, Gaziosmanpaşa Training and Research Hospital Endoscopy Unit for colonoscopy between January 2022 and March 2022 were included in the study. Hemorrhoids were diagnosed with colonoscopy by specialists in general surgery. Presence of constipation was evaluated according to Rome IV criteria (11). Toilet types at home were learned from all patients.

A questionnaire was applied to 161 patients whose ages ranged between 21 and 80 years. We excluded 19 patients with missing data or with the presence of anorectal tumor, ileo-anal/rectal anastomosis, anal stenosis, anal fistula, anal fissure, pelvic floor disorders, any previous history of anorectal surgery, pelvic irradiation, neurologic diseases, diabetes, chronic use of opioid medications, Chron's disease, ulcerative colon or rectum tumors, because we thought that they would directly affect toilet habits. As a result, 142 patients were included in the study.

The relationship between the presence of hemorrhoids and age, gender, type of toilet at home, preferred toilet type and constipation was investigated.

Study Design

According to the pilot study results, which included a randomly selected 10 patients from the database, 15.0% of this population had a hemorrhoidal disease. To estimate a 5% difference in effect size, with an error rate of 5% and 80% power, at least 53 patients were needed. Considering the possibility for incomplete or incorrect questionnaires by adding 10% loss to this figure resulted in a total of 58 patients needed.

Quantitative Variables

Etiologically, age, gender, fiber-poor diet, constipation, diarrhea and posture during defecation are thought to be associated with hemorrhoid disease (6). Patients with hemorrhoid disease were included in the research group, and patients without hemorrhoid disease were included in the control group.

Statistical Methods

Descriptive statistics were given as mean ± standard deviation and median with minimum-maximum values for continuous variables depending on their distribution. Numbers and percentages were used for categorical variables. The normal distribution of the numerical variables was analyzed by the Shapiro-Wilk, Kolmogorov-Smirnov, and Anderson-Darling tests. The Independent Samples t-test was used to compare two independent groups where numerical variables had a normal distribution. Pearson chi-square and Fisher's Exact tests were used to compare the differences between categorical variables in 2x2 tables. For statistical analysis, Jamovi project (2021), Jamovi (Version 2.2.2.0) and JASP (Version 0.16) were used. In all statistical analyses, the significance level (p-value) was set at 0.05.

Results

There were a total of 142 patients in the study. The mean age was 53.6±11.8 years. The female to male ratio was 1.33. The demographic and clinical characteristics of the study group are given in Table 1. The seated toilet was reported by more than half of the patients (58.5%) as the preferred toilet type. Constipation was detected in 70 patients (49.3%). This rate was 43% in patients with hemorrhoids and 53.7% in patients without hemorrhoids. Other clinical characteristics of the patients are summarized in Table 1.

Of them, 60 patients (42.3%) reported the presence of hemorrhoidal pathologies. The mean ages of the patients with and without hemorrhoids were similar (p=0.654). There were significantly more male patients with hemorrhoids (56.7% vs. 32.9%, p=0.008). Sex distribution and preferred toilet type of the patients with and without hemorrhoids are shown in Figure 1 and 2. We detected no significant differences in the type of toilet present at their homes, preferred toilet type and constipation (p>0.05).

Discussion

Most studies in the literature on hemorrhoids are therapeutic, but studies on risk factors are few. There are studies showing relationship between age, gender, fiber diet, defecation posture, chronic constipation, portal hypertension, spinal cord injury and hemorrhoids (5). According to the study of Johanson and Sonnenberg (12) the prevalence of hemorrhoids peaked between the ages of 45 and 65 and declined after the age of 65. The effect of age and gender on anal pressure is known (13). Also, the relationship between anal pressure and hemorrhoids has been shown in many studies (14). In addition, anorectal mean resting pressure has been shown to decrease with age in 40 percent of studies (13). When we think logically, we expect the incidence of hemorrhoids to decrease with age. However, in the current study, no significant relationship was found between age and hemorrhoids. In women, on the other hand, it was found

Table 1. Demographic and clinical characteristics of the study group

	Patients Overall (n=142) Mean ± SD	With hemorrhoids (n=60) Mean ± SD	Without hemorrhoids (n=82) Mean ± SD	p value
Age (year)	53.6±11.8	54.1±11.0	53.2±12.4	0.654**
	n (%)	**n (%)**	**N (%)**	
Sex				
Female	81 (57.0)	26 (43.3)	55 (67.1)	**0.008***
Male	61 (43.0)	34 (56.7)	27 (32.9)	
Type of toilet in home				
Squat	71 (50.0)	30 (50.0)	41 (50.0)	0.999*
Seated	107 (75.4)	41 (68.3)	66 (80.5)	0.143*
Preferred toilet type				
Only squat + usually squat	55 (38.7)	26 (43.3)	29 (35.4)	0.154*
Squat and seated	4 (2.8)	0 (0.0)	4 (4.9)	
Only seated + usually seated	83 (58.5)	34 (56.7)	49 (59.8)	
Constipation				
Positive	70 (49.3)	26 (43.3)	44 (53.7)	0.296*
Negative	72 (50.7)	34 (56.7)	38 (46.3)	

*: Independent Samples t-test, **: Pearson chi-square or Fisher's Exact test, SD: standard deviation

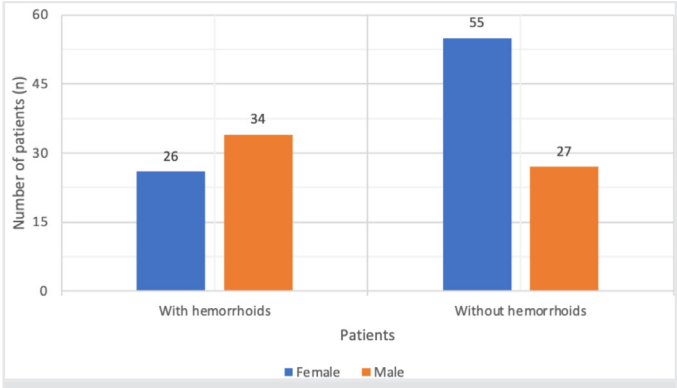

Figure 1. Sex distribution of the patients with and without hemorrhoids

Figure 2. Preferred toilet types of the patients with and without hemorrhoids

that the mean anal squeeze pressure was lower in most of the studies (15,16). However, no significant relationship was shown between external hemorrhoids and gender in adults (17,18). But, it was shown that boys had significantly more hemorrhoids (19). In our study, we found that hemorrhoids were significantly more common in men, as in boys.

There are few studies in the literature examining the relationship between toilet type and hemorrhoids, and the findings are controversial (9,10,19,20). In the literature, we did not find a study similar to the current study in adults. It was shown that the rectoanal angle was straightened during squat (9), in one study, defecation was more comfortable and less strained in the squat position, and in another study, complaints were reduced in patients with hemorrhoid diseaseusing the seated toilet (10). For this reason, it has been suggested that hemorrhoids can be seen less frequently in those who have squat toilet habits. According to a study by Yildiz et al. (19), external hemorrhoids were significantly more common in children with seated toilet habits. But, in the current study, it was observed that there was no significant relationship between toilet type and hemorrhoid disease. However, we included both adults and patients with internal and external hemorrhoids in our study. Therefore, for

only symptomatic hemorrhoid disease, a seated toilet may be a risk factor.

Chronic constipation is thought to be a risk factor for hemorrhoid disease (12). However, in our study, no significant relationship was found between the presence of constipation and hemorrhoids. In this study, it was thought that such a result was obtained because acute constipation was questioned, not chronic constipation. In addition, it would be more accurate to use scores such as KESS scoring in the evaluation of constipation (21).

Study Limitations

The patients included in the current study usually had a gastroenterological complaint, so it would be better to perform a similar study on the general population. This was a cross-sectional study and it would be more appropriate to conduct a long-term cohort study. The grade and types of hemorrhoids were not included in the study, only the presence of hemorrhoids was examined.

Conclusion

As a result, studies on the etiology of hemorrhoids are insufficient, controversial and scarce in terms of evidence level. In the literature, the relationship between anal pressure and hemorrhoid disease has been revealed more clearly. Although we concluded that there was no relationship between the preferred toilet type and hemorrhoid disease in the current study, we thought that this should be clarified by multicenter randomized cohort studies with long-term follow-up. It is thought that future studies on the causes of hemorrhoid disease will be designed by using the classification of hemorrhoids, body mass index measurement, diet questioning, family history, anal manometry and chronic constipation scoring.

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Ethics

Ethics Committee Approval: In this prospective study, ethics committee approval was obtained from the Gaziosmanpaşa Training and Research Hospital Ethics Committee (approval number: 49 and date: 22/12/2021).

Informed Consent: Informed consent was obtained from all patients participating in the study.

Peer-review: Externally peer reviewed.

Authorship Contributions

Surgical and Medical Practices: E.Y., Concept: N.U., Design: N.U., E.Y., Data Collection or Processing: N.U., Analysis or Interpretation: N.U., Literature Search: N.U., E.Y., Writing: N.U.

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