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Etiology of thrombosed external hemorrhoids

Etiologia zakrzepicy żył okołoodbytowych

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Introduction:	Summary External hemorrhoids are located outside of the dentate line and covered by anoderm. Thrombosed external hemorrhoids are one of the frequent acute anorectal diseases which are treated successfully in the proctology outpatient room. The etiology of this disease is still unknown. Knowledge of the etiology of thrombosed external hemorrhoids could prevent recurrence of this disease and help prepare good prophylaxis.
Material/Methods:	A group of 50 patients with a diagnosis of thrombosed external hemorrhoids and treated in the Mikolaj Pirogow Regional Specialist Hospital in Lodz was interviewed by means of the author's own questionnaire concerning demography and published hypothesis. The necessary statistics were conducted by means of STATISTICA 7.1 and EXCEL 2008 programs.
Results:	The analysis of the survey results shows a significant relationship of thrombosed external hemorrhoids and presence of internal hemorrhoids, practice of anoreceptive sex and consumption of more alcohol products than usual. There was no statistical relationship between lifting heavy objects, eating spicy food, having hard stools or straining at toilet during motions and thrombosed external hemorrhoids.
Conclusions:	This study confirmed three hypotheses on the causes of thrombosed external hemorrhoids which were presented in medical journals available in the MEDLINE database. The author of this article believes that it is necessary to conduct a multi-center study, which would explain the exact etiology of this disease. Knowledge about the etiology of thrombosed external disease would help develop effective prevention and treatment.
Key words:	etiology • hemorrhoids • thrombosed external hemorrhoids

Wstęp:	Streszczenie Żyłaki zewnętrzne odbytu umiejscowione są poniżej linii grzebieniastej i pokryte anodermą. Zakrzepica żył okołoodbytowych jest jedną z częściej występujących ostrych chorób odbytu, która może być skutecznie leczona w warunkach ambulatoryjnych. Etiologia tej choroby jest nadal nieznaną. Ustalenie etiologii zakrzepicy żył okołoodbytowych może przyczynić się do zmniejszenia liczby nawrotów tej choroby i przygotować skuteczną profilaktykę.
Material/Metody:	Grupa 50 chorych z rozpoznąną zakrzepicą żył okołoodbytowych, leczonych w Wojewódzkim Specjalistycznym Szpitalu im. Dra Mikołaja Pirogowa w Łodzi została przebadana i wybrana za pomocą kwestionariusza opracowanego przez autora artykułu, w którym zbadano opublikowane hipotezy dotyczące tej choroby i dane demograficzne pacjentów. Dane statystyczne opracowano za pomocą programów STATISTICA 7.1 i EXCEL 2008.
Wyniki:	Analiza wyników badań wykazała zależność istotną statystycznie między występowaniem zakrzepicy żył okołoodbytowych a obecnością żylaków wewnętrznych odbytu, uprawianiem seksu analnego i nadużywaniem napojów alkoholowych. W przeprowadzonym badaniu nie zaobserwowano zależności istotnej statystycznie pomiędzy podnoszeniem ciężkich przedmiotów, jedzeniem

pikantnych potraw, oddawaniem twardego stolca czy parciem na stolec podczas defekacji a zakrzepicą żył okołoodbytowych.

Wnioski: Przeprowadzone badanie potwierdziło trzy hipotezy na temat przyczyn powstawania zakrzepicy żył okołoodbytowych, które zostały przedstawione w innych czasopismach medycznych dostępnych w bazie MEDLINE. Autor artykułu uważa, że konieczne jest przeprowadzenie wielośrodkowych badań, które mogłyby wyjaśnić dokładnie etiologię tej choroby. Wiedza o etiologii zakrzepicy żył okołoodbytowych może się przyczynić do opracowania skutecznych metod zapobiegania i leczenia tej choroby.

Słowa kluczowe: etiologia • żylaki odbytu • zakrzepica żył okołoodbytowych

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INTRODUCTION

External hemorrhoids are located outside of the dentate line and covered by anoderm [11,12,23]. Thrombosed external hemorrhoids are one of the frequent acute anorectal diseases which are treated successfully in the proctology outpatient room [8,11,12,16,17,23]. Patients go to a hospital because of severe pain in the anorectal region which is caused by internal sphincter hypertonicity [3,4,5,12,16,23,]. Pain caused by thrombosed external hemorrhoids is presented during standing, sitting or defecating [3,4,7,8,9,22,23]. During physical examination of the anal area, a single venous thrombosed external hemorrhoid is visible (Fig. 1) or a perforating clot of blood on top of the external hemorrhoid (Fig. 2) [11,12,16,23]. Such symptoms are often accompanied by bleeding [3,7,8,11,17,23].

MATERIAL AND METHODS

The study group consisted of 50 patients with diagnosed thrombosed external hemorrhoids who were treated in the outpatient room in Mikolaj Pirogow High Specialized Hospital in Lodz, with consent and a correctly filled questionnaire. The survey was conducted from January 2008 to May 2011. Patients had been directed to the proctology outpatient room by general practitioners, urologists and gynecologists. The diagnosis was made after proctologic assessment in the knee-chest position.

The study included 50 patients, of whom 28 (56%) were female and 22 (44%) male (Tab. 1). The predominant age of respondents ranged from 26 to 44 years old – there were 37 (74%) surveyed patients. In the group of patients who were surveyed, 21 (42%) had secondary education. Among the 50 respondents, 45 (90%) lived in a city with over 500 000 citizens (Tab. 1).

The necessary calculations were performed using the package STATISTICA 7.1 and EXCEL 2008. The survey



Fig. 1. Thrombosed external hemorrhoid, diameter 15–20 mm, in 27-year-old woman



Fig. 2. Thrombosed external hemorrhoid, diameter 15–20 mm, with a black clot, perforating on the top, in a 40-year-old man

results were compared with hypotheses about the etiology of thrombosed external hemorrhoids which were published in medical journals available in the MEDLINE database.

Table 1. The features of the group under examination

		No. of patients	[%]
Age	under 25 years old	1	2
	from 26 to 44 years old	37	74
	from 45 to 64 years old	12	24
	over 65 years old	0	0
	total	50	100
Sex	female	28	56
	male	22	44
	total	50	100
Domicile	in a city above 500 000 citizens	45	90
	in a city from 25 000 to 500 000 citizens	4	8
	in a town below 25 000 citizens	1	2
	in the countryside	0	0
	total	50	100
Education	primary	5	10
	vocational	14	28
	secondary	21	42
	university	10	20
	total	50	100

Table 2. Patients' response to the questions in the questionnaire

Questions from the questionnaire	Yes [%]	No [%]
Did you have hard stools within 4 weeks before the occurrence thrombosed external hemorrhoids?	19 [38]	31 [62]
Did you eat spicy food within 4 weeks before the occurrence thrombosed external hemorrhoids?	6 [12]	44 [88]
Did you drink more alcohol products than usual within 4 weeks before the occurrence thrombosed external hemorrhoids?	28 [56]	22 [44]
Did you practice of anoreceptive sex within 4 weeks before the occurrence thrombosed external hemorrhoids?	38 [76]	12 [24]
Did you use dry toilet paper after motions with combined with wet cleaning within 4 weeks before the occurrence thrombosed external hemorrhoids?	4 [8]	46 [92]
Did you lift a heavy load within 4 weeks before the occurrence thrombosed external hemorrhoids?	7 [14]	43 [86]
Did you strain at toilet during motions within 4 weeks before the occurrence thrombosed external hemorrhoids?	8 [16]	42 [84]
Did you have diagnosed internal hemorrhoids before the occurrence thrombosed external hemorrhoids?	37 [74]	13 [26]

Consent

This research was carried out in compliance with the Helsinki Declaration. In order to conduct this study an

anonymous questionnaire was prepared. Completion of the survey by the patient was voluntary and anonymous. Each patient gave oral consent to participate in this research.

RESULTS

Among the 50 examined patients there were no patients suffering from liver cirrhosis, fissure in ano, rectal prolapse or proctitis. Patients have never taken anticoagulants. Examined women were not pregnant or after childbirth in the last 6 months. In this study no patient had diarrhea, cough or sneeze, or operation in the anorectal region within 4 weeks before the occurrence of thrombosed external hemorrhoids. In this survey there was a strong statistical correlation between presence of internal hemorrhoids, practice of anoreceptive sex and consumption of more alcohol products than usual within 4 weeks before the occurrence of thrombosed external hemorrhoids ($p < 0.05$) (Tab. 2). The performed statistical analysis using STATISTICA 7.1 shows that there was no statistically significant dependence between gender, age, education, place of residence and the presence of internal hemorrhoids, anal sex or higher than usual alcohol consumption ($p > 0.05$).

There was no significant relationship between thrombosed external hemorrhoids and lifting heavy objects, eating spicy food, having hard stools or straining at toilet during motions ($p < 0.05$).

DISCUSSION

There are many hypotheses regarding the etiology of thrombosed external hemorrhoids which have been published in medical journals available in the MEDLINE database [1,2,5,6,9,13,14,15,19,20,21].

In many studies, including in this research, most people suffering from thrombosed external hemorrhoids are relatively young people [1,2,11,15].

Delaini et al. [7], Roschke et al. [19] and Stein [21] found a statistically significant correlation between the presence of internal hemorrhoids and the risk of occurrence of thrombosed external hemorrhoids. A similar conclusion follows from the results of this study.

Another study revealed no statistically significant relationship between pregnancy and the risk of thrombosed external hemorrhoids [6,13,21]. But in the prospective study conducted by Abramovitz et al. [1], thrombosed external hemorrhoids were observed in 13 (7.8%) women during pregnancy and in 33 (20%) women during the postpartum period.

Several studies have shown a strong correlation between hard stool, constipation and severe physical exertion and the occurrence of thrombosed external hemorrhoids [13,14,15,19,21]. Oh [15] suggested that the stagnation of blood and trauma to the anal vessels due to strain is the common denominator in the development of thrombosis and postulated eliminating stasis, trauma, and excess strain. Oh [15] recommended softening the stool, which is according to him the key to preventing excessive strain.

It is certain that during anal sex damage of the anal vessels and sphincter spasm are observed, which might lead to temporarily high intravenous pressure in the anal veins

which causes rupture of the endothelial lining and initiation of thrombosis [5,15,20].

It seems that constant anal hygiene through the use of bathtubs, showers and washing after defecation may reduce the risk of occurrence of thrombosed external hemorrhoids [10].

Factors which may influence the occurrence of thrombosed external hemorrhoids may be local inflammation of anal skin triggered by different agents and substances, anal fistulas and detergents within soaps or shower gels [2,20].

This study confirmed three hypotheses on the causes of thrombosed external hemorrhoids which were presented in medical journals available in the MEDLINE database. The author of this article believes that it is necessary to conduct a multi-center study which would explain the exact etiology of this disease. Knowledge about the etiology of thrombosed external disease would help develop effective prevention and treatment.

Competing interests

There were no competing interests. The study was sponsored by the author of this article. There were no financial or non-financial competing interests (personal, political, religious, academic, intellectual or any other).

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