Relationship between haemorrhoidal grade and toilet habits

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PURPOSE: *Haemorrhoids are defined as the distal displacement and venous distention of the normal hemorrhoidal cushions. Multiple factors have been claimed to be causes of hemorrhoidal development, but the exact pathophysiology is poorly understood. The objective of this study was to assess how common is the habit to spend a long time on the toilet in patients seen for hemorrhoidal disease. Our hypothesis is that haemorrhoids could be significantly associated with a long sitting time because this practice contributes to the weakening and then dilatation of the hemorrhoidal cushions.*
METHODS: *The survey was conducted from April 2019 to June 2019. The study group consisted of 52 adult non-obese patients with diagnosed internal or external haemorrhoids. These patients have been asked to fill an anonymous short questionnaire. We divided the group into four classes and we calculated the mean time spent on the toilet for each group. Then we realized a plot to assess a relationship among these two variables.*
RESULTS: *We found that the two studied variables (time spent on the toilet and degree of haemorrhoids) seemed to be linked by a linear association (R2=0.95).*
CONCLUSION: *The results obtained in our preliminary study encourage us to continue this work, increasing the number of patients. If our supposition should be confirmed by further studies, we could say that toilet habits modification should be advised to any patients with any degree of haemorrhoids, as a part of treatment and as a preventive measure.*

KEY WORDS: Haemorrhoids, Goligher's classification, Constipation, Toilet habit

Introduction

Haemorrhoids are defined as the distal displacement and venous distention of the normal hemorrhoidal cushions [1]. This condition affects 39 to 52% of adults and represent an important clinical and social problem. Self-reported incidence of haemorrhoids in the USA is 10 million per year, corresponding to 4.4% of the population [2].
Multiple factors have been claimed to be causes of hemorrhoidal development, but the exact pathophysiology is poorly understood. Many studies have shown a correlation between constipation, prolonged straining, obesity and the occurrence of external haemorrhoids [3,4] and some aspects of lifestyle and toilet habits have also been investigated.
The objective of this study was to assess how common is the habit to spend a long time on the toilet in patients seen for hemorrhoidal disease. Our hypothesis is that haemorrhoids could be significantly associated with a long sitting time because this practice contributes to the weakening and then dilatation of the hemorrhoidal cushions.

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Matherials and Methods

The survey was conducted from April 2019 to June 2019. The study group consisted of 52 adult non-obese patients (ranged between 24 and 83 years old, BMI ranged between 20 and 25 kg/m^2) who had been directed to our proctology outpatient room in San Salvatore Hospital in L'Aquila and with diagnosed internal or external haemorrhoids. The diagnosis was made after clinical proctologic assessment in the knee-chest position and the haemorrhoids were graded according to Goligher's classification [5], based on their appearance and degree of prolapse. These patients have been asked to fill an anonymous short questionnaire, presented in Table I. Data obtained from this experimental group were then compared with those of a control population consisting of 43 patients with comparable anthropometric parameters, but without proctologic comorbidities.
The first goal of the study was to assess whether there was a relationship between the haemorrhoidal grade and the time spent in the toilet. We divided the group into four classes, based on the degree of haemorrhoids. Seven patients were in the first group (Grade I); fifteen patients were in the second group (Grade II); eighteen patients were in the third group (Grade III); twelve patients were in the fourth group (Grade IV). We calculated the mean time spent on the toilet for each group, and then we realized a plot to assess a relationship among these two variables.

TABLE I - *Short questionnaire used in the study*

Age:
Sex:
Weight:
Height:
Usually, how much time do you spend sitting on the toilet?
Are you used to reading or using the telephone while you are sitting on the toilet?
How often do you usually go to the toilet?
Are you usually constipated?
Do you have pain during defecation?
If yes, how long?
Do you use enemas or other systems to facilitate evacuation?
If yes, how long?
Have you ever noticed blood in the stool?

Results

Of the 52 enrolled patients, there were 33 males and 19 females, with a mean age of 51 years-old. All the questionnaires were considered appropriate for the study. We found that the two studied variables (time spent on the toilet and degree of haemorrhoids) seemed to be linked by a linear association (R^2=0.95). In particular, in the first group the mean time spent on the toilet was 7.5 minutes; in the second group it was 8.64 minutes; in the third group it was 12.69 minutes; in the fourth group it was 14.17 minutes (Fig. 1). In the control group, the mean time was 7.2 minutes, which is comparable to the time referred by the first group of the studied population.
Moreover, as a secondary endpoint, we assessed how many patients in each group suffered from constipation. Considering the first and second group together, we found that six patients (27.3%) referred to be habitually constipated, while in the third and fourth groups sixteen patients (53.3%) referred this problem. Among the 43 patients of the control group, only 20.9% suffered from constipation (9 patients).

Discussion

The anal cushions of patients with haemorrhoids are characterized by significant anatomopathological changes: abnormal venous dilatation, thrombosis, degenerative process in the collagen fibres and fibroelastic tissues, distortion and rupture of the anal muscle [6]. These findings suggest that haemorrhoids develop when the supporting tissues of the anal cushions weakens and deteriorate [7].

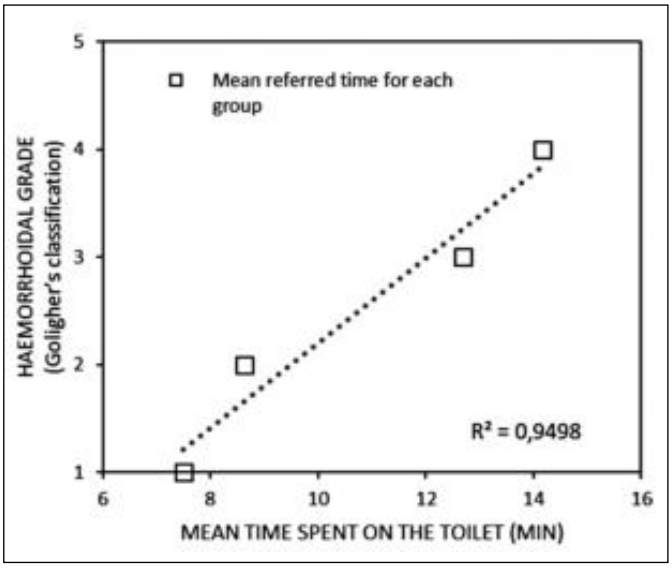

Fig. 1 - *Plot describing the relationship among the two studied variables*

Multiple factors have been claimed to be causes of hemorrhoidal development, but the exact pathogenesis is not completely understood. Some aspects of lifestyle and toilet habits have been investigated: obesity, as a risk factor for many diseases of vascular relevance, is recognized among the main factors predisposing to the development of haemorrhoids [7-10]. In fact, obesity is a state of chronic metabolic inflammation [11], besides being a condition that increases intra-abdominal pressure. This increase means obstruction of venous return, resulting in engorgement of the hemorrhoidal plexus [7]. Other important conditions linked to the risk of developing haemorrhoids, increasing intra-abdominal pressure, are: constipation, diarrhoea, inadequate dietary fiber, chronic straining during defecation, pregnancy and a sedentary lifestyle [12,13].
We decided in our study to assess how common is the habit to spend a long time on the toilet in patients seen for hemorrhoidal disease. Our hypothesis is that haemorrhoids could be significantly associated with a long sitting time because this practice contributes to the weakening and then dilatation of the hemorrhoidal cushions.
A survey by the Imperial Cancer Research Fund (ICRF) [14] found that 4 out of 10 people read in the toilet. Dehn et al. [15], in their article published on Lancet, investigated about how toilette reading extends the stay in the toilets, leading to an inefficient strain and then to the development of constipation and haemorrhoids. They found that patients with haemorrhoids tended to spend longer time in the toilet and were more likely to read. Our study shows results which are in line with this report, showing a linear association between the two studied variables (time spent on the toilet and degree of haemorrhoids) and also showing no difference between the control group (no proctologic diseases) and the group of patients with haemorrhoids grade I according to Goligher's classification. In these terms, the time spent on the toilet could be considered a factor that worsens the haemorrhoidal disease.
However, this preliminary study has many limits. First of all, the number of patients is still too small to have a real statistical significance; moreover, the bias linked to subjectivity and therefore to the relative unreliability of the questionnaire must be considered. Finally, we have to consider all the other conditions that could be connected to the hemorrhoidal development. Concerning this last point, we underlined that all the patients considered in the study were non-obese, just because obesity seems to be one of the most frequent comorbidities associated to this pathology.
The results obtained in our preliminary study encourage us to continue this work, increasing the number of patients. If our supposition should be confirmed by further studies, we could say that toilet habits modification should be advised to any patients with any degree of haemorrhoids, as a part of treatment and as a preventive measure [5,6].

Riassunto

Per emorroidi si intende la dislocazione distale e la distensione venosa dei normali cuscini emorroidali. Molteplici sono i fattori predisponenti allo sviluppo emorroidario, ma l'esatta fisiopatologia è poco conosciuta. Ci siamo proposti con questo studio di valutare quanto sia comune l'abitudine di passare molto tempo seduti in bagno nei pazienti che hanno sviluppato la malattia emorroidaria. L'ipotesi è che le emorroidi potrebbero essere significativamente associate a prolungati periodi trascorsi in bagno in quanto questo contribuirebbe all'indebolimento delle strutture connettivali e quindi alla dilatazione dei cuscini emorroidali.
È stato effettuato un sondaggio da aprile 2019 a giugno 2019 su un gruppo di 52 pazienti adulti, non obesi, con diagnosi di emorroidi interne o esterne. A questi pazienti è stato chiesto di compilare un breve questionario anonimo. Abbiamo diviso il gruppo in quattro classi e abbiamo calcolato il tempo medio trascorso in bagno per ciascun gruppo. Quindi abbiamo realizzato un diagramma per valutare una relazione tra queste due variabili.
Abbiamo scoperto che le due variabili studiate (tempo trascorso in bagno e grado di emorroidi) sembravano essere collegate da un'associazione lineare (R2 = 0,95).
In conclusione i risultati ottenuti nel nostro studio preliminare ci incoraggiano a continuare questo lavoro, aumentando il numero di pazienti. Se la nostra supposizione dovesse essere confermata da ulteriori studi, potremmo dire che la modifica delle abitudini in bagno dovrebbe essere consigliata a tutti i pazienti con qualsiasi grado di emorroidi, come parte del trattamento e come misura preventiva.

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