



THYROID FUNCTIONS IN FEMALES WITH ANAL DISEASES

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Abstract:

Thyroid hormones affect practically all organs in the body and control the organism's basal metabolism. The stomach and viscera are not spared, and thyroid dysfunction causes a variety of gastrointestinal symptoms, the true prevalence of which is unknown. Digestive symptoms or manifestations may also disclose thyroid disease clues, and if ignored or underestimated, diagnosis may be delayed, with dangerous consequences. Thyroid interactions with the gastrointestinal system have been widely recorded, however, there is no comprehensive report on the various effects of hypothyroidism in the literature. Although gastrointestinal motor dysfunction is largely acknowledged as the primary cause of symptoms, many complex phenomena remain unknown. Hemorrhoids are a prevalent gastrointestinal condition that is being identified in general health screenings. Many clinical signs, such as asymptomatic piles or rectal bleeding, have a negative impact on quality of life. High intra-abdominal pressure and a fragile supporting structure are also risk factors for hemorrhoids. Obesity, constipation, diarrhea, chronic or persistent cough, pregnancy or delivery, and prolonged standing are all circumstances that might raise intra-abdominal pressure. Hypothyroidism manifests itself in a variety of organs and tissues. Constipation is the most prevalent gastrointestinal complaint in individuals with hypothyroidism, which can lead to hemorrhoids.

Recent research suggests that a thyroid hormone deficit causes the muscles that lining the digestive system to contract less forcefully. The accumulation of mucopolysaccharides, particularly hyaluronic acid, in the digestive tissue, which causes intestinal edema, is the most likely pathogenic cause. This decrease in motor activity lengthens the time that feces spend transiting through the digestive tract, allowing more water to be absorbed and finally leading to constipation that increases the intraluminal pressure, and causes compromise of blood supply to the posterior anal wall and finally causes anal fissure.

Keywords : Anal diseases, Thyroid, Fissure

Introduction

Thyroid hormones affect practically all organs in the body and control the organism's basal metabolism¹. The stomach and viscera are not spared, and thyroid dysfunction causes a variety of gastrointestinal symptoms, the true prevalence of which is unknown². Digestive symptoms or manifestations may also disclose thyroid disease clues, and if ignored or underestimated, diagnosis may be delayed, with dangerous consequences^{3&4}. Thyroid interactions with the gastrointestinal system have been widely recorded, however, there is no comprehensive report on the various effects of hypothyroidism in the literature. Although gastrointestinal motor dysfunction is largely acknowledged as the primary cause of symptoms, many complex phenomena remain unknown⁵.

Hemorrhoids are a prevalent gastrointestinal condition that is being identified in general health screenings⁶. Many clinical signs, such as asymptomatic piles or rectal bleeding, have a negative impact on quality of life⁷. High intra-abdominal pressure and a fragile supporting structure are also risk factors for hemorrhoids. Obesity, constipation, diarrhea, chronic or persistent cough, pregnancy or delivery, and prolonged standing are all circumstances that might raise intra-abdominal pressure⁸. Hypothyroidism manifests itself in a variety of organs and tissues. Constipation is the most prevalent gastrointestinal complaint in individuals with hypothyroidism, which can lead to hemorrhoids^{9&10}.

A split in the mucosa running from the anal verge to the dentate line is referred to as an anal fissure. Pain and rectal bleeding are common symptoms of fissures¹¹. About 20% of patients with fissure in ano have a triggering history of constipation. Hard feces cause localized damage to the rectal mucosa, which in turn causes the internal anal sphincter to become hypertonic. Constipation then results in another sphincter spasm, creating a vicious cycle¹². Some scientists

can suggest that pain causes hypertonia to develop. However, the failure to treat the hypertonia with painkillers disproves this theory¹³.

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Patients and Method

This single center descriptive study was conducted from 1/ 3/ 2018 to 1/ 3/ 2020. It included 128 women, who complained of anal disease, hemorrhoids and fissure in Basra Province. Perianal fistula and abscess were excluded, since constipation is not associated with them. The approach involved that all hemorrhoids and anal fissure patients who consulted the center during the study period.

All cases were assessed by history, physical and proctoscopic examination to make the diagnosis and determine the type and degree of hemorrhoids. The variables studied were age, height, weight, chief complaint, associated symptoms, characteristics of hemorrhoids, and the level of thyroid stimulating hormone was measured for each patient. To achieve this purpose, a special form was designed to collect data.

Ethical consideration included obtaining an informed consent from the patients to use their relevant data in the study, stressing on the confidentiality principle.

Checking the quality of data included checking the data documentation on the study

form by the same researcher. This was followed by cross checking between the researchers. Finally, a checking was conducted on the data entry process by comparing the digital data with the paper ones before making the statistical analysis. The software package used for the purpose of statistical analysis was SPSS, Version 26. Percentages with frequencies were used to present the qualitative data.

Results

The study showed that the most frequent age group of women patients with anal disease was the one between 31 to 40 years, followed by the group between 41 to 50 years Table I. Regarding BMI, it is clear from the Table that there was a directly proportional increase in the frequency/percentage of the patients with the increase in the BMI

Table I: Some demographic and anthropometric characteristics of the study population

Characteristic	Frequency	Percent
Age group (year):		
Twenty or younger	10	7.8
From 21 to 30	21	16.4
From 31 to 40	39	30.5
From 41 to 50	34	26.6
From 51 to 60	18	14.1
Sixty one or older	6	4.7
BMI group (kg/m²):		
Underweight	2	1.6
Normal weight	19	14.8
Overweight	41	32.0
Obese	66	51.6
Total	128	100.0

The women patients with anal diseases complained some symptoms of thyroid gland dysfunction. The percentage of these

symptoms ranged between 23.4% to 93.8% (Table II).

Table II: Thyroid gland abnormality symptoms in the study population

Symptom*	Frequency	Percent
Constipation	120	93.8
Weight gain	43	33.6
Cold intolerance	31	24.2
Oligomenorrhea**	30	23.4

* A patient may complain more than one symptom

**Menopause= 19 (14.9%)

When the TSH hormone levels of the study population were tested, it was found that only 57.8% of these levels were in normal level limits (Table III).

Table III: Thyroid stimulating hormone among the study population

Laboratory results	Frequency	Percent
TSH groups:		
Low TSH level	4	3.1
Normal TSH level	74	57.8
Considerably high TSH level	50	39.1
Total	128	100.0

Discussion

This study showed that more than 56.7% of the studied women located in the age group between 31 to 50 years. This study documented an increase in the percentage of patients with the increase in age, but there was a decrease in frequencies/ percentages after the age of 40 years. Contrary to our findings, in a study done by Pang Hsu1 et al., using Taiwan's longitudinal health insurance database, it was reported that there was a trend of directly proportional increase in the

percentage of patients with the increase in age, with no decline¹⁶.

The present study found that most of patients with hemorrhoids or anal fissure were obese (51%) or overweight (32%)¹⁷. A study found that obesity plays a role in insulin resistance and hypothyroidism and that hypothyroidism contributes to metabolic syndrome¹⁸. Increased intra-abdominal pressure, which also causes difficult bowel motions, is the main cause of hemorrhoids. Obese patients frequently have hemorrhoids, which can put more strain on their rectal muscles¹⁹. The

Koreaional Health and Nutrition Examination Survey showed obesity as a risk factor for hemorrhoids as well²⁰. Obesity has been identified as a substantial risk factor for anal fissures, according to another study from Sri Lanka²¹. Additionally, the primary cause of anal fissure in patients is constipation. All of these features might be associated with hypothyroidism.

About 93% of our patients had a history of constipation, which is an important shard symptom between hypothyroidism and the studied anal diseases. The overall prevalence of hypothyroidism in general population was 10.95%, according to a study conducted by Unnikrishnan et al., in India. Males received 5.02% of the diagnoses, compared to a substantially greater percentage of females (15.86%)²². The level of laboratory documented hypothyroidism (high TSH level) in this study was 39.1% which is notably higher than that of general population. A comparable percentage was recorded by Prabhakaran and his colleagues in their study that was conducted at Saveetha Medical College and Hospital, Chennai,

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Tamil Nadu, India about the thyroid profile in patients with fissure in ano in the South Indian population, when they found that the incidence of hypothyroidism in patients with anal diseases was 32%²³. Gokila et al., did a cohort study that aimed to analyze the correlation between hypothyroidism and the development of fissures in ano among consecutive 52 patients who were diagnosed and with anal fissure. They concluded that in females who get an anal fissure, hypothyroidism is more prevalent (32%)²⁴.

In conclusion, many patients who visit the surgical outpatient department have lower gastrointestinal issues. The patients' symptoms and sequelae, which vary in form, degree, and severity, are all distressing. We found higher percentage of hypothyroidism in patients with anal illnesses; this can be exploited to promote patient screening for hemorrhoids or anorectal fissures. Additionally, people with hypothyroidism may be counseled on how to control their symptoms in order to avoid anal fissures and hemorrhoids.

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Author 3- Writing , Review, Approval of the article

Availability of Data and Material:

The corresponding author is prompt to supply datasets generated during and/or analyzed during the current study on wise request.

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