

# Self-perception of swallowing by patients with benign nonsurgical thyroid disease

## *Autopercepção da deglutição em pacientes com doença tireoidiana benigna não cirúrgica*

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### ABSTRACT

**Purpose:** To verify the frequency of swallowing complaints in patients with benign nonsurgical thyroid disease and compare the self-perception of swallowing disorder intensity between different types of thyroid disease. **Methods:** The study sample comprised 39 women aged 19-58 years ( $38.54 \pm 10.74$ ) with hypothyroidism ( $n=22$ ; 56.4%) or thyroid nodules ( $n=17$ ; 43.6%). Presence and type of swallowing complaint and self-perception of swallowing disorder intensity were investigated by means of self-ratings recorded on a 100-millimeter visual analog scale. The data were analyzed by descriptive measures and the Mann-Whitney nonparametric test was used to compare the self-perception of swallowing disorder intensity between both clinical diagnoses of thyroid disease. The level of 5% was adopted for statistical significance. **Results:** Twenty-six (66.7%) individuals reported the following swallowing complaints: pharyngolaryngeal stasis sensation (37.15%), choking (34.29%), and odynophagia (28.57%). The mean value of self-perception of swallowing disorder intensity by the visual analog scale was 59.35 ( $\pm 27.38$ ) millimeters. No difference in self-perception was reported between the clinical diagnoses of thyroid disease. **Conclusion:** In this sample, swallowing complaint was frequently observed in patients with benign nonsurgical thyroid disease. Moderate self-perception of swallowing disorder intensity was reported regardless of the clinical diagnosis of thyroid disease.

### RESUMO

**Objetivo:** verificar a frequência de queixa para deglutir em pacientes com doença tireoidiana benigna não cirúrgica e comparar a autopercepção de intensidade da alteração de deglutição em diferentes tipos de doença tireoidiana. **Método:** a amostra do estudo foi composta por 39 mulheres com idades entre 19 e 58 anos ( $38,54 \pm 10,74$  anos) e diagnóstico de hipotireoidismo ( $n=22$ ; 56,4%) ou nódulos tireoidianos ( $n=17$ ; 43,6%). Investigou-se a presença de queixa, tipo de queixa e autopercepção da intensidade da alteração de deglutição por meio da escala analógico-visual de 100 milímetros. Os dados foram analisados de forma descritiva e para comparar a autopercepção entre os diferentes diagnósticos clínicos utilizamos o teste não paramétrico de Mann-hitney. O nível de significância foi de 5%. **Resultados:** vinte e seis (66,7%) participantes relataram queixa para deglutir. As queixas referidas foram sensação de estase em região laringofaríngea (37,15%), engasgo (34,29%) e odinofagia (28,57%). O valor médio da autopercepção de intensidade da alteração de deglutição por meio da escala analógico-visual foi 59,35 ( $\pm 27,38$ ) milímetros. A autopercepção não foi diferente entre os diagnósticos clínicos de doença tireoidiana. **Conclusão:** nessa amostra, queixas para deglutir foram frequentes em mulheres com doenças tireoidianas benignas não cirúrgicas. Essas pacientes percebem a alteração de forma moderada, independentemente do diagnóstico clínico da patologia tireoidiana.

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## INTRODUCTION

Thyroid disorders are the second most common endocrine condition worldwide<sup>(1)</sup>. Swallowing dysfunctions are the result of compressive effects or the consequence of surgical interventions<sup>(2,3)</sup>, with gastrointestinal tract dysmotility leading the complaint reports<sup>(4-6)</sup>.

Changes in the oropharyngeal transit differ according to the type of thyroid disease and seem to be more concentrated in the laryngopharyngeal region<sup>(4-12)</sup>. In hypothyroidism, discomfort is perceived in the cervical region, manifested as dry throat, dyspnea, globus pharyngeus, pain, itching, and burning<sup>(5,8)</sup>, which are symptoms related to myxedema that compromise laryngeal mobility and the proper functioning of pharyngoesophageal transit<sup>(4,6)</sup>. In patients with thyroid nodules, the symptoms are associated with the degree of compression, and there may be surgical indication even for benign cases<sup>(9-11)</sup>. In hyperthyroidism, reports indicate specific cases of dysphagia associated with thyrotoxic myopathy, which is a more unusual condition<sup>(12)</sup>.

In spite of these characteristics, these symptoms are often underestimated, undiagnosed, or diagnosed late in this population<sup>(4)</sup>, which may result in worsening of the overall health and quality of life of patients. Exploring the self-perception of individuals with thyroid disease with respect to their functional condition is an attitude recommended in the literature<sup>(13)</sup>. Therefore, the aim of the present study was to verify the frequency of swallowing complaints in patients with benign nonsurgical thyroid disease and compare the self-perception of swallowing disorder intensity between the two types of thyroid disease investigated - hypothyroidism and thyroid nodules.

## METHODS

The study sample was composed of 39 women with hypothyroidism (n=22; 56.4%) or thyroid nodules (n=17; 43.6%), aged 19 to 58 years (mean=38.54 ± 10.74), assisted at the same university hospital. Exclusion criteria were as follows: patients aged 59 years or older, who had undergone surgery or radiotherapy in the head and neck region, with difficulties in understanding simple orders, syndromes, neurological disorders, and history of trauma. No male individuals that met the inclusion criteria were found during sample collection.

Survey participants responded to a key question about swallowing ("Do you have difficulty in swallowing?") and their answers were dichotomized into "yes" or "no". Participants with swallowing complaints were requested to describe the problem.

After that, they were asked to report their self-perception of swallowing disorder intensity by means of the Visual Analogue Scale (VAS)<sup>(14)</sup>. The VAS consisted of a horizontal line, 100 mm in length, in which the patients marked the point that represented their swallowing disorder intensity. In this scale, the left end corresponded to the minimum swallowing disorder intensity, whereas the right end corresponded to the maximum swallowing disorder intensity. The researcher measured the exact value referred by the patient using a 100 mm ruler.

The difference between the VAS means for the different diagnoses of thyroid disease was statistically analyzed by applying the Mann-Whitney nonparametric test with significance level of 5%.

This sectional study originated from a research project approved by the Human Research Ethics Committee of "Onofre Lopes" University Hospital under process no. 629.468/14. All participants were clarified about the study objectives and signed an Informed Consent Form (ICF) prior to being submitted to the procedures.

## RESULTS

Twenty-six (66.7%) patients reported swallowing complaints. As each patient could report more than one complaint, 35 reports were registered and grouped into three categories: pharyngolaryngeal stasis sensation (37.15%), choking (34.29%), and odynophagia (28.57%).

The mean value for self-perception of swallowing disorder intensity exceeded the midpoint of the millimetric line, reaching 59.35 (± 27.38) mm. No significant difference was observed between the VAS mean scores for both types of thyroid disease; however, the self-assessment mean was higher in the cases of thyroid nodule (Table 1).

## DISCUSSION

Swallowing complaints were frequently reported by the participants of the present study. These complaints were characterized by reports of laryngopharyngeal stasis sensation, choking, and odynophagia, confirming the higher concentration of symptoms in the regions near the thyroid gland. In addition, moderate swallowing disorder intensity was perceived by the patients for both types of thyroid dysfunction.

The presence of thyroid nodules or edema in this region may produce compressive effects that limit laryngeal mobility<sup>(6,9,11)</sup> and favor the emergence of swallowing complaints. The presence

**Table 1.** Difference between the means of self-perception of swallowing disorder using the visual analog scale (VAS) for the two types of benign nonsurgical thyroid disease investigated

	Types of benign nonsurgical thyroid disease				p value*
	Hyperthyroidism (n=13; 50%)		Thyroid nodule (n=13; 50%)		
	Mean	SD	Mean	SD	
<b>Self-perception of swallowing disorder based on the VAS</b>	53.00	29.31	65.69	24.82	0.270

\* Mann-Whitney nonparametric test

**Caption:** VAS = visual analog scale; SD = standard deviation

of compressive symptoms in benign thyroid diseases cannot be easily assessed objectively, but they are known to be more commonly observed in surgical cases<sup>(10)</sup>. Nevertheless, the results of this study showed that this function should be investigated even in nonsurgical cases.

Regarding the VAS, moderate swallowing disorder intensity was perceived by the study participants. As in the cases of voice<sup>(15)</sup>, it is possible to infer that, when self-assessing swallowing, patients rely on physical sensations of discomfort that an external examiner cannot measure. Therefore, this may be a complementary strategy in the investigation of swallowing performance in such cases, with the VAS being a viable alternative for measuring symptom intensity.

Limitations of the present study include the fact that the sample was collected in a health service, the absence of male individuals, and the presence of patients with other diagnoses of thyroid disease, which represent a selection bias. Moreover, the registration of hormonal levels and number, size, and location of the nodules in the medical records was inconsistent, which impaired data analysis. In further studies to be conducted with larger samples, we intend to address confounding factors such as gastroesophageal reflux and the association of self-perception results with the clinical and instrumental assessment of swallowing in this population.

## CONCLUSION

In this study, swallowing complaint was frequently observed in women with nonsurgical benign thyroid disease. Moderate self-perception of swallowing disorder intensity was reported regardless of the clinical diagnosis of thyroid disease. The results indicate the need to investigate symptoms of swallowing disorders in this population.

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## Author contributions

*LP was responsible for the design and guidance of the study, data collection, and final revision of the manuscript; MPS, MNA and EBMC contributed to the data collection and final revision of the manuscript; LBRS was responsible for the final revision of the manuscript.*