

## **OROPHARYNGEAL DYSPHAGIA: AN ASSOCIATION BETWEEN DYSPHAGIA LEVEL, SYMPTOMS AND COMORBIDITY**

### **DISFAGIA OROFARÍNGEA: ASSOCIAÇÕES ENTRE O GRAU DE DISFAGIA, SINTOMAS E COMORBIDADES**

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#### **ABSTRACT**

**Objective:** Associate levels of dysphagia according to the patient health condition.

**Methods:** Retrospective study analyzing 149 medical records of patients who underwent Fiberoptic endoscopic evaluation of swallowing (FEES) in a tertiary hospital from 2016 to 2018. Data was collected on symptoms, comorbidities, FEES findings and oropharynx dysphagia classification. Statistical analysis was performed through descriptive and bivariate analysis using the Chi-square and Fisher's exact tests with a 5% significance level. **Results:** Most patients are elderly, female and with the main complaint of gagging for liquids and solids (30.9%), and gagging only for liquids was associated with the presence of mild dysphagia. The most prevalent degree of oropharynx dysphagia (OD) was mild (45%). In relation to patients' diseases, associations were identified between amyotrophic lateral sclerosis and mild dysphagia, Parkinson's disease and moderate dysphagia, and past pneumonia and / or head and neck cancer with severe dysphagia. **Conclusions:** The main complaint of patients with dysphagia and their pathological history should guide the treatment, without dispensing with complementary exams such as FEES, highlighting Parkinson's disease with moderate oropharynx dysphagia and past pneumonia and / or head and neck cancer as severe dysphagia.

**Keywords:** Deglutition; Dysphagia; Deglutition disorders, Nasolaryngoscope.

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## Resumo

**Objetivo:** Associar os graus de disfagia com condições de saúde do paciente. **Métodos:** Estudo retrospectivo com análise de 149 prontuários de pacientes que realizaram videoendoscopia da deglutição (VED) em hospital terciário no período de 2016 a 2018. Foram coletados dados sobre sintomas, comorbidades, achados da videoendoscopia da deglutição e classificação da disfagia orofaríngea. A análise estatística foi feita através de análise descritiva e bivariada com os testes Qui-quadrado e exato de Fisher com significância de 5%. **Resultados:** Maioria dos pacientes são idosos, do sexo feminino e com queixa principal de engasgos para líquidos e sólidos (30,9%), sendo que engasgo apenas para líquido teve associação com presença de disfagia leve. O grau de disfagia orofaríngea (DO) mais prevalente foi o leve (45%). Em relação às doenças dos pacientes, foram identificadas associações entre esclerose lateral amiotrófica e disfagia leve, doença de Parkinson e disfagia moderada, e passado de pneumonia e/ou câncer de cabeça e pescoço com disfagia grave. **Conclusões:** A queixa principal do paciente com disfagia e seu antecedente patológico deve nortear o tratamento, sem dispensar exames complementares como a VED, destacando doença de Parkinson com disfagia orofaríngea moderada e passado de pneumonia e/ou câncer de cabeça e pescoço como disfagia grave.

**Palavras chaves:** Transtornos da deglutição, epidemiologia, Exames médicos.

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## INTRODUCTION

Dysphagia derives from the Greek term, which means "disorder to eat" or "disorder to swallow". It occurs frequently in the elderly (40% of people over 65 years of age), which, depending on the degree of intensity, causes complications such as depression or anxiety due to the difficulty of dealing with the problems involved in this condition (especially in social media involving food), as well as more serious complications, such as pneumonia and malnutrition<sup>1,2</sup>.

Moreover, patients with dysphagia demand a higher health cost, which makes the condition more difficult, and their early identification is extremely important for a better outcome<sup>3</sup>.

This condition is classified according to its topography in esophageal dysphagia and oropharynx dysphagia, having structural organic diseases (benign or malignant) and / or diseases capable of altering the swallowing neurophysiology (mainly motility and sensitivity)<sup>2</sup>.

The present study will treat oropharynx dysphagia, which is a swallowing disorder that involves changes in the interaction between the oral and pharyngeal phases, ranging from minimal difficulty in swallowing food and liquids to incapacity, which can bring risks to develop malnutrition, dehydration and aspiration pneumonia.<sup>4,5</sup>

Some factors capable of negatively influencing the oral and pharyngeal phase of swallowing will cause oropharynx dysphagia. For example, the lack of teeth and decreased saliva, common in the elderly, affects chewing. The reduction in muscle strength of the pharynx in neurological diseases and in sarcopenia facilitates the formation of laryngeal residues<sup>2</sup>. Injuries or dysfunctions in the central nervous system, as a result of Parkinson's disease, can decrease the laryngeal sensitivity to the presence of food and then, generate delay in the pharyngeal response to swallow<sup>2,6</sup>.

All of these changes cause oropharynx dysphagia, but the relationship between situations like these with the degree of dysphagia that the individual has is still unknown. This study aims to associate the level of oropharynx dysphagia with signs, symptoms and comorbidities of the patients analyzed.

## **METHODS**

Ethical Research Committee at the University Hospital Onofre Lopes under protocol number 3027515 approved this study.

The study is a retrospective analysis that evaluated 149 physical records of patients who were treated at an otorhinolaryngology outpatient clinic specialized in oropharynx dysphagia and underwent Fiberoptic endoscopic evaluation of swallowing (FEES) in a tertiary hospital from 2016 to 2018.

Data were collected for identification (age, sex), clinical characteristics (main patient complaint, comorbidity), information from Fiberoptic endoscopic evaluation of swallowing reports involving: velo pharynx sphincter competence, larynx sensitivity, salivary stasis, moment of onset of swallowing, posterior oral escape, number of swallows, food residue after swallowing, laryngeal penetration and laryngeal aspiration.

Information on the level of dysphagia of each patient was also collected, using the Classification of the level of dysphagia according to Macedo Filho (2003)<sup>7</sup>.

Descriptive and bivariate analyzes were performed using the Chi-square and Fisher's exact tests for a significance level of 5%.

## **RESULTS**

One hundred forty-nine medical records were analyzed, where 63.5% of the patients were elderly, 55% were female and had the following distribution in the dysphagia classification: 30.2% without dysphagia, 40.9% with mild dysphagia, 16.8% with moderate dysphagia and 12.1% with severe dysphagia. Most patients had the main complaint "gagging for liquids and solids" (30.9%).

The main pathological findings in the FEES examination were decreased and/or absent laryngeal sensitivity (71.1%) and presence of posterior oral escape (56.4%). It was also observed that the majority of patients had a normal swallowing number (79.2%),

absence of salivary stasis (96%), absence of food residue (57.7%), absence of anterior oral escape (98%), velo pharynx sphincter competence (90.6%), beginning of the pharyngeal response to swallow in valleculae (85.9%) and absence of laryngeal penetration (76.5%) and aspiration (87.9%) (Table 1).

Table 1 - Outcomes observed in the Fiberoptic endoscopic evaluation of swallowing in relation to the severity of oropharynx dysphagia. ENT clinic. HUOL. Natal, RN, 2018.

OUTCOME	LOW		MODERATE		SERIOUS	
	n(%)	p	n(%)	p	n(%)	p
Multiple swallows	12 (48)	0,451	9 (36)	0,003*	4 (16)	0,388
Salivary stasis	1 (20)	0,341	0 (0)	0,391	4 (80)	0,001*
Pharyngeal residue	29 (46)	0,279	17 (27)	0,004*	11 (17,5)	0,085
Nasal regurgitation	1 (50)	0,653	0 (0)	0,692	1 (50)	0,228
Sensibility changes	14 (32,6)	0,185	11 (25,6)	0,067	8 (18,6)	0,120
Posterior oral escape	47 (56)	<0,001*	19 (22,6)	0,015*	10 (11,9)	0,913
Incompetence in closing the velo pharynx sphincter	8 (57,1)	0,195	3 (21,4)	0,428	3 (21,4)	0,228
Onset of response in piriform sinuses	9 (45)	0,712	8 (40)	0,002*	2 (10)	0,548
Larynx Penetration	-	-	17 (50)	<0,001*	17 (50)	<0,001*
Tracheo larynx aspiration	-	-	-	-	18 (100)	<0,001*

Subtitle: OD – Oropharynx dysphagia; \*:  $p < 0,05$

It was statistically observed that complaints of “stuck” ( $p < 0.001$ ) and, in patients with mild oropharynx dysphagia, complaints of gagging for liquid ( $p = 0.008$ ) are associated with normal FESS examinations.

There was an association of mild Oropharynx Dysfunction and amyotrophic lateral sclerosis (ALS), moderate with Parkinson's disease and severe with a previous history of pneumonia and head and neck cancer (Table 2).

**Table 2** - Distribution of morbidities related to the severity of oropharynx dysphagia. ENT clinic. HUOL. Natal, RN / 2018.

MORBIDITIES	LOW		MODERATE		SERIOUS	
	n(%)	p	n(%)	p	n(%)	p
<b>ALS</b>	21 (63,6)	0,003*	4 (12,1)	0,301	5 (15,2)	0,540
<b>Parkinson</b>	1 (9,1)	0,022*	5 (45,5)	0,008*	1 (9,1)	0,606
<b>BS</b>	5 (45,5)	0,752	4 (36,4)	0,089	2 (18,2)	0,394
<b>HNC</b>	1 (12,5)	0,091	2 (25)	0,401	4 (50)	0,008*
<b>Pneumonia</b>	0 (0)	0,118	0 (0)	0,613	3 (75)	0,006*

**Subtitle:** OD – Oropharynx dysphagia; ALS – Amyotrophic lateral sclerosis; BS – Brain stroke; HNC – Head and Neck Cancer. \*:  $p < 0,05$

## DISCUSSION

Dysphagia is a clinical condition resulting from several diseases, having an important impact on the quality of life of affected patients. It is important to know how to deal with it, always with a multidisciplinary team, to avoid its complications, such as bronchial aspiration pneumonia and weight loss.

For this, management with each level of dysphagia might be done differently<sup>8</sup>. To reach the conclusion of what degree of dysphagia we are facing, it is possible to have clinical information and complementary exams, such as FESS and video deglutogram<sup>8,9</sup>.

It is known that in patients with multiple sclerosis, for example, in addition to dysphagia being frequent, clinical conditions such as progressive form of the disease, cerebellar involvement and / or cognitive functions are related to the severity of dysphagia<sup>10</sup>.

Several cases, laryngeal penetration and aspiration outcomes are extremely important to determine referral procedures, multidisciplinary therapeutic planning and management of oropharynx dysphagia. What is better defined with complementary exams, with the FESS being a reliable and easier exam compared to the video deglutogram<sup>11</sup>.

However, such exams are not always accessible quickly. The importance of this study was to be able to understand that some complaints and comorbidities are related to the degree of dysphagia and this allows directing behaviors such as speech therapy, caloric supplementation and even an alternative way of temporary swallowing in cases of suspected severe dysphagia.

Regarding the symptom, we observed that the complaint of stuck is not associated with oropharynx dysphagia. While choking for liquids and solids refer to mild dysphagia, this may be due to the fact that most patients in the studied sample had mild dysphagia.

It was observed that patients with amyotrophic lateral sclerosis have mild dysphagia, but this must have been found because patients with this diagnosis are evaluated early in the disease at the study hospital. We know that this disease is progressive and that, according to its stage, we can find moderate and severe dysphagia<sup>12</sup>.

By looking at other underlying diseases, we realize that Parkinson's disease is related to moderate dysphagia. Already past pneumonia, head and neck cancer to severe dysphagia. Therefore, in patients with these comorbidities with signs and/or symptoms of dysphagia, we must be more incisive about speech therapy and even an alternative way of swallowing, individualizing each case.

## **CONCLUSION**

Given these data, it is observed the importance of considering the main complaint of the patient with dysphagia and its pathological history to guide the treatment regarding dysphagia and its complications, highlighting the presence of pneumonia and head and neck cancer as a probable severe dysphagia.

However, whenever the complementary exam is available, such as Fiberoptic endoscopic evaluation of swallowing, perform it to better understand the risk of pharyngeal aspiration and favor decision-making for the establishment of referral, management and multidisciplinary interventions in oropharynx dysphagia.

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