Original Article

Artigo Original

Identification of risk groups for oropharyngeal dysphagia in hospitalized patients in a university hospital

Identificação de grupos de risco para disfagia orofaríngea em pacientes internados em um hospital universitário

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Keywords

Swallowing disorders
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ABSTRACT

Purpose: To identify risk groups for oropharyngeal dysphagia in hospitalized patients in a university hospital. **Methods:** The study was design as an exploratory cross-sectional with quantitative data analysis. The researched population consisted of 32 patients admitted to the medical clinic at the university hospital. Patient history data were collected, followed by a universal swallowing screening which included functional feeding assessment, to observe clinical signs and symptoms of dysphagia, and assessment of nutritional status through anthropometric data and laboratory tests. **Results:** Of the total sample, the majority of patients was male over 60 years. The most common comorbidities related to patients with signs and symptoms of dysphagia were chronic obstructive pulmonary disease, systemic arterial hypertension, congestive heart failure, diabetes mellitus and acute myocardial infarction. The food consistency that showed higher presence of clinical signs of aspiration was pudding and the predominant sign was wet voice. **Conclusion:** There is a high incidence of risk for oropharyngeal dysphagia in hospitalized patients and an even higher rate of hospitalized patients with nutritional deficits or already malnourished. Hospitalized patients with respiratory diseases, chronic obstructive pulmonary disease, congestive heart failure and patients with xerostomia were indicated as risk group for oropharyngeal dysphagia.

Descritores

Transtornos de deglutição
Desnutrição
Triagem
Fonoaudiologia

RESUMO

Objetivo: Identificar os grupos de risco para disfagia orofaríngea em pacientes internados em um hospital universitário. **Métodos:** O estudo foi transversal do tipo exploratório com análise quantitativa dos resultados. A população pesquisada foi formada por 32 pacientes internados nas clínicas médicas do hospital. Foram coletados dados da história do paciente e realizada a triagem universal de deglutição, avaliação funcional da alimentação para observação de sinais e sintomas de disfagia e avaliação do estado nutricional por dados antropométricos e exames laboratoriais. **Resultados:** Da amostra total, a maioria dos pacientes era homens acima de 60 anos. As comorbidades mais associadas a pacientes com sintomas e sinais de disfagia foram doença pulmonar obstrutiva crônica, hipertensão arterial sistêmica, insuficiência cardíaca congestiva, diabetes melitus e infarto agudo do miocárdio. A consistência alimentar em que foi observada a maior presença de sinal clínico de aspiração foi o pudim, e o sinal predominante, a voz molhada. **Conclusão:** Há grande incidência de risco para disfagia orofaríngea nos pacientes internados e um índice ainda maior de pacientes internados em comprometimento nutricional ou já desnutridos. Pacientes internados com doenças respiratórias, doença pulmonar obstrutiva crônica, insuficiência cardíaca congestiva e pacientes com xerostomia foram apontados como grupo de risco para disfagia orofaríngea.

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INTRODUCTION

Oropharyngeal dysphagia is a disorder with specific signs and symptoms that interfere in the swallowing process. It affects any part or stage of the bolus transportation, from the mouth to the stomach, and may cause damage to the patient, such as malnourishment, dehydration and respiratory complications. It can also lead to death[1]. It is considered to be a disorder that incapacitates the person from the functional and emotional point of view, since it interferes with social relationships and the pleasant relationship with the act of eating[2].

Oropharyngeal dysphagia increases the costs of hospitalization, prolongs hospital stay and exposes the patient to the risk of malnourishment, dehydration and pulmonary complications due to bronchoaspiration[3]. It should be considered as a public health issue, once it affects a considerable part of the population and leads to high rates of mortality/morbidity[4].

Patients with swallowing disorders need to adequate their diet or even find a different feeding system. In a university hospital of Ceará, from July to October 2009, a total of 65 patients specializing in neurology, gastroenterology, medical clinic and infectology need to use different feeding paths[5].

One of the modalities to assess swallowing at the bedside is screening, with pass/fail characteristics. With that, it is possible to identify the patients who need a complete swallowing assessment[6].

The incidence of oropharyngeal dysphagia among post-stroke patients who were submitted to Speech language evaluation in up to 48 hours of hospital admission ranges from 43 to 50%[7,8].

The elderly also presented with changes in swallowing. A 55% incidence of dysphagia among elderly patients with respiratory infections is observed, and it is possible to relate dysphagia and bronchoaspiration to the main causes of respiratory conditions in this population[9].

When we consider the relationship between dysphagia and the risk of malnutrition among hospitalized patients, it is observed that those with dysphagia present higher risk of malnutrition or are already malnourished[10].

Several tools can be used to screen for nutritional risk, and the choice of screening method should consider the context in which the patient is inserted. Nutritional evaluation reveals the nutritional status and up to which point the needs of the patients are being met[11].

Facing the exposed, the objective of this study was to identify risk groups for oropharyngeal dysphagia among patients hospitalized in medical clinics of a university hospital.

METHODS

This exploratory cross-sectional study was conducted with the quantitative analysis of results. This study was approved by the favorable report no. 120.155, from October 8, 2012, by the Human Research Ethics Committee of Universidade Federal de Santa Catarina (CEPSH/ UFSC).

All of the patients who were hospitalized in the 73 available beds in the medical clinics 1, 2 and 3 of a university hospital were invited to participate in the study, considering one patient per bed, from the period of October 10 to November 9, 2012.

As the research counted with patients whom accepted to be part of it, belonging or not to a risk group, it was recognized by the literature as a base disease with dysphagia's risk. This way, this tool was named universal swallowing trial.

From those who were invited to participate in this study, 50 accepted to undergo screening for the risk of oropharyngeal dysphagia and signed the informed consent, while four did not accept to undergo the tests and 18 were not assessed as to nutritional risks due to hospital-related problems. Therefore, the sample was composed by convenience, accounting for 32 individuals who underwent the full evaluation (risk for dysphagia and nutritional status).

As inclusion criteria, patients admitted to medical clinics 1, 2 and 3 of the university hospital, with no distinction of gender and age, who presented with clinical conditions for the evaluation and accepted to sign the informed consent.

Patients who presented Glasgow coma scale inferior to 10 were excluded.

This study was conducted in two stages. The first one consisted of collecting the data from the patients' medical records. The observed data included name, age, base disease, associated comorbidities, reason for hospitalization, nutritional evaluation, respiratory conditions and level of awareness.

In the second stage, for patients with stable clinical conditions, the functional assessment of swallowing was conducted to observe signs and symptoms of oropharyngeal dysphagia and clinical signs of bronchoaspiration[12], as well as nutritional evaluation to identify the group with nutritional compromise, as observed in Appendix 1 and 2.

The collected data were statistically analyzed by the software MedCalc®, version 12.3.0.0 (MedCalc Software bvba 1993–2012, Belgium).

In this study, non-parametric statistical tests were used, as well as the Fischer exact test and the Spearman correlation, and the considered p-value was 5% ($p<0.05$).

Risk screening for oropharyngeal dysphagia

The bedside screening is a type of evaluation with a pass/fail characteristic that is able to identify patients who need a full swallowing assessment[5].

The risk screening for oropharyngeal dysphagia is usually used in the Service of Speech Language Pathology and Audiology — Dysphagia in the university hospital and the VI Module — Hospital Internship of the Speech Language Pathology and Audiology Course, seventh period. It was applied by interns of the Speech Language Pathology and Audiology course at UFSC, who were supervised by the professor in charge, and it classified the patients between pass (those who did not present clinical signs of aspiration and/or signs of oropharyngeal dysphagia) and fail (with clinical signs of aspiration and/or oropharyngeal dysphagia).

All of the patients were placed at high supine position on the bed and monitored as to O_2 saturation by means of pulse

oximetry. The oximeter was Morefitness®. For the observation of symptoms of oropharyngeal dysphagia and the clinical signs of bronchoaspiration, the functional swallowing evaluation was conducted in the patient, according to the classification of the American Dietetic Association[13]. In order to obtain the consistencies of liquid, nectar, honey and pudding, water and thickeners from Thick&Easy® were used, as well as measuring spoon from the same brand, and all of the preparations were conducted in a disposable glass.

For the liquid consistency, 100 mL of water was used, and for the nectar, honey and pudding consistencies, 100 mL of water and one, one and a half and two spoons of thickener were used, respectively.

Three offers were made for each of the consistencies. In the liquid and the nectar consistencies, a common glass and free swallowing were used, and for honey and pudding, a 5 mL disposable plastic spoon was used.

Assessment of nutritional status

The action of evaluating the nutritional status of hospitalized patients is essential, since malnourishment is one of the consequences of oropharyngeal dysphagia, besides contributing for the slow clinical evolution of the patient.

This assessment was conducted by a nutritionist of the university hospital of UFSC, and applied up to 72 hours after speech language screening. Anthropometric and biochemical data were used for the nutritional evaluation.

For data analysis, all of the patients classified with malnourishment, levels I, II and III, and mild, moderate and severe depletion, were grouped in the category of nutritionally compromised, and the ones classified with eutrophy, pre-obesity and obesity level I, II and III were grouped in the category with no risk for malnourishment.

RESULTS

The risk screening for oropharyngeal dysphagia was applied in 32 patients, out of whom 59% "passed" and did not present risk factors for oropharyngeal dysphagia. The other 41% presented risk factors for oropharyngeal dysphagia, that is, they "failed" the screening. In the nutritional status evaluation, 78% of the patients presented with nutritional compromise (Table 1).

Table 1. Distribution of risk screening for dysphagia and nutritional compromise (n=32)

Risk screening for dysphagia			Screening for nutritional compromise		
	n	%		n	%
Passed	19	59	Yes	25	78
Failed	13	41	No	7	22
Total	32	100	Total	32	100

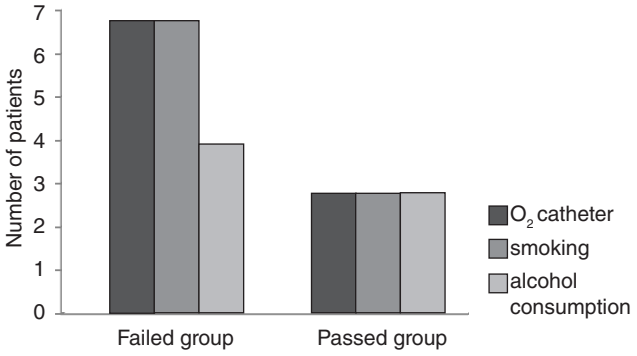
As to the demographic characteristics of the sample, most participants were male, aged more than 60 years old.

In the clinical data from medical records, the high incidence of former smokers and former alcohol consumers was observed (Graph 1).

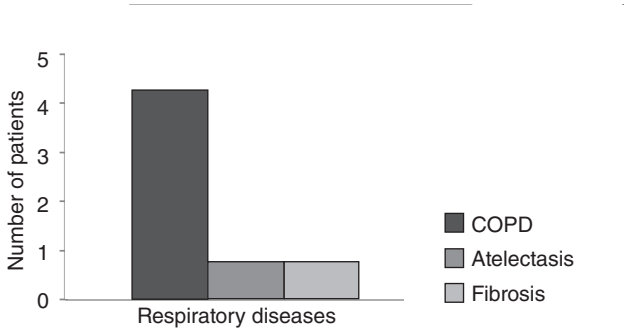
Hospitalized patients with respiratory diseases were the ones that presented higher risk for oropharyngeal dysphagia, and all of those with specific diagnosis of chronic obstructive pulmonary disease (COPD) "failed" the screening (Graph 2).

The main comorbidities presented by the patients who participated in the research were COPD, diabetes mellitus, systemic arterial hypertension, congestive heart failure (CHF) and acute myocardial infarction (Table 2).

From the participants who presented with risk for oropharyngeal dysphagia, 84% presented clinical signs of bronchoaspiration in the pudding consistency. It is worth to mention that five patients (38%) presented clinical signs of bronchoaspiration

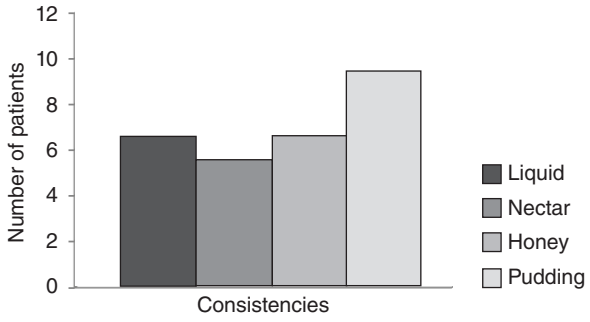


Graph 1. Distribution of variables use of O_2 catheter, smoking and alcohol consumption

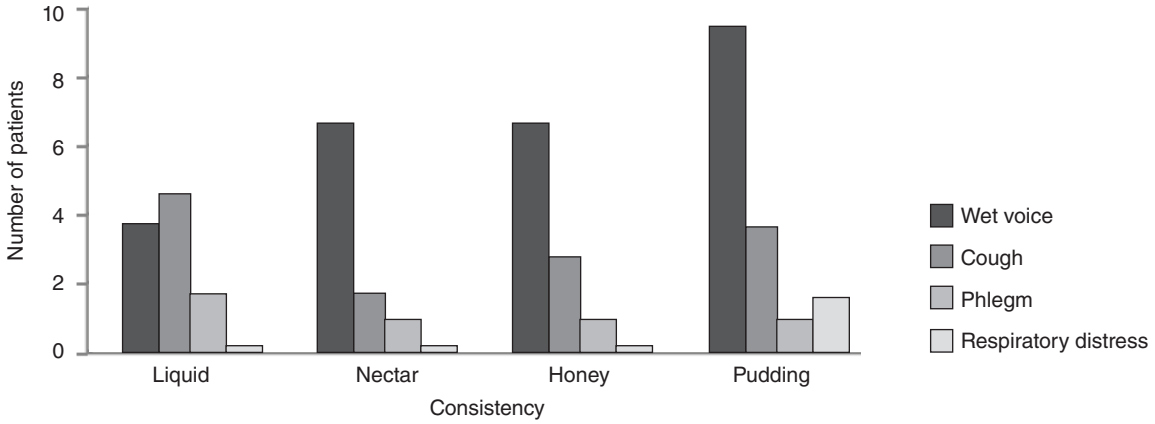


Caption: COPD = chronic obstructive pulmonary disease

Graph 2. Distribution of patients by disease inside the pneumology specialty



Graph 3. Distribution of patients with clinical signs of bronchoaspiration by consistency



Graph 4. Distribution of patients by clinical symptom of bronchoaspiration and by consistency

Table 2. Statistical analysis of the risk group for dysphagia in comparison to the main presented comorbidities — chronic obstructive pulmonary disease, diabetes mellitus, systemic arterial hypertension, congestive heart failure and acute myocardial infarction (n=32)

Variables	Risk for dysphagia		Fischer	Spearman	
	No (n)	Yes (n)	p-value	Correlation coefficient	p-value
Chronic obstructive pulmonary disease			0.0063*	0.5200	0.0032*
No	19	8			
Yes	0	5			
Diabetes mellitus			1.0000	0.0240	0.8921
No	14	10			
Yes	5	3			
Systemic arterial hypertension			0.7248	0.0139	0.4465
No	9	5			
Yes	10	8			
Congestive heart failure			0.0189*	0.4570	0.0086*
No	19	9			
Yes	0	4			
Acute myocardial infarction			0.5518	0.0171	0.3507
No	18	11			
Yes	1	2			

Fischer exact test and Spearman correlation coefficient
*Statistically significant value

Table 3. Statistical analysis of the risk group for dysphagia in relation to the variables pneumology, gastroenterology, age older than 60 years old, nutritional compromise and xerostomia (n=32)

Variables	Risk for dysphagia		Fischer	Spearman	
	No (n)	Yes (n)	p-value	Correlation coefficient	p-value
Specialty: pneumology			0.0005*	0.6400	<0.0001*
No	19	6			
Yes	0	7			
Specialty: gastroenterology			0.4203	-0.0184	0.3143
No	13	11			
Yes	6	2			
Age older than 60 years old			0.4726	0.1680	0.3570
No	12	6			
Yes	7	7			
Nutritional compromise			0.6706	0.0130	0.4787
No	5	2			
Yes	14	11			
Xerostomia			0.0101*	0.4040	0.0218*
No	18	7			
Yes	1	6			

Fischer exact test and Spearman correlation coefficient
*Statistically significant value

for all of the consistencies (liquid, nectar, honey and pudding) (Graph 3).

Wet voice is the main clinical signal of bronchoaspiration among patients who presented risk for oropharyngeal dysphagia in the population (Graph 4).

As the risk group for dysphagia, those with complaints of xerostomia, CHF, COPD and those admitted by pneumology stand out (Table 3).

During the interview of the screening questionnaire, all of the patients participating in this study were fed orally, and none of them reported difficulties to swallow nor dietary changes. Still, all of them informed they felt like eating.

DISCUSSION

In this study, it was possible to identify risk groups for oropharyngeal dysphagia in a university hospital by applying a screening instrument, as described in the methodology. The screening results concerning risk for oropharyngeal dysphagia, applied with hospitalized patients, respond to the objective of this study and point to the incidence of 41% of patients with risk for oropharyngeal dysphagia.

A similar result was observed in the speech language assessment conducted up to 48 hours after hospital admission, which presented the incidence of oropharyngeal dysphagia in 50% of the hospitalized patients. The assessment performed at the time of hospital discharge, after speech language intervention, showed 37.9% of patients with dysphagia[7].

As for age, there was no difference between the relationship of elderly patients and the risk for oropharyngeal dysphagia. However, the correlation coefficient points to the low level of relationship between these factors, once data in the literature show the elderly population as a risk factor for oropharyngeal dysphagia, emphasizing the interferences of aging in the swallowing process. Aging changes the efficient swallowing mechanisms, be it in form, safety or in dietary quality. The truth is that the elderly population is usually underdiagnosed and undertreated[14].

A more rigid follow-up is required for the elderly population, once any change in swallowing safety can lead to direct changes in the nutritional status, thus increasing the level of respiratory complications among these individuals[15].

In this study, results concerning the variable age may have suffered interferences due to the reduced number of participants.

In order to analyze the specialty with higher risk for oropharyngeal dysphagia, patients hospitalized by the medical specialties of pneumology and gastroenterology were used, since they were more frequent in the study sample. There was a difference seen for the people hospitalized by pneumology as to the risk for oropharyngeal dysphagia, with p=0.0005 and correlation coefficient of 0.6400.

This information can be related to the fact that these patients presented compromised respiratory capacity, which interferes in cough efficiency[16]. Coughing is the second mechanism in charge of the system that protects the lower airways, and it can be voluntary or involuntary. It is necessary to eliminate the secretion from the airways and to protect against the aspiration of food, secretions and foreign bodies[17].

Another important aspect is the fact that the patients who participated in this study, during the interviews, did not report difficulties to eat, nor did they inform changing the form, volume or consistency of the food, which, in practice, was not true. It was observed that patients ate little, with changes or restrictions in whatever was offered to them, in general.

This aspect was also observed in another study of patients with respiratory changes. Even though they did not report complaints related to swallowing, there was important risk for aspiration, once they had changes in the respiratory pattern, which can lead to changes in the coordination between respiration and swallowing, which is essential for the protection of the lower airway[18].

Among the comorbidities presented by the patients who participated in the research, those with COPD (p=0.0063) and CHF (p=0.0189) presented chances of being in the group with risk for oropharyngeal dysphagia. In the other comorbidities, there was no significance.

This information corroborates the statement that patients with COPD presented incoordination between swallowing and respiration, and that may respond to the findings in oropharyngeal dysphagia[19].

The findings in this study are also in accordance with the results that show the relationship between individuals with COPD and symptoms of dysphagia. Data are related to the pharyngeal and esophageal stages of swallowing, to the mechanism of airway protection, to the history of pneumonia and the dietary symptoms[20].

Coughing is one of the main symptoms of COPD, as well as respiratory distress and dyspnea. However, these signals are also present in the protocols of swallowing evaluation, as clinical signals of bronchoaspiration. These symptoms in common limit the safe evaluation of swallowing, since many times the symptoms of the disease may "mask" the signals of bronchoaspiration, as the latter can mask the disease. Maybe a more reliable result is the wet voice. Studies with instrumental evaluations are mandatory to go further in this discussion.

Patients with chronic cough present history of repetitive pneumonia. Chronic cough is a symptom considered to be one of the main indicators of COPD[19]. It is also presented as a signal of bronchoaspiration, and this is one of the main causes of pulmonary complications, especially aspiration pneumonia. It also exposes the patient to pictures of malnourishment and dehydration. It is important to discuss if COPD worsens the cases of dysphagia and if chronic cough can be considered as a clinical signal of aspiration in the protocols of risk screening for oropharyngeal dysphagia, once they are part of the clinical picture of patients with COPD[20].

In deglutition, there is an action called central swallowing apnea. It is the closure of the rima glottidis, which is one of the main protective actions of the lower airways[21]. It is known that patients with respiratory compromise present respiration incoordination, which reflects on swallowing incoordination. Therefore, a relevant result is the fact that patients who failed

the screening for the risk of oropharyngeal dysphagia had more difficulties swallowing the pudding consistency. It is worth to mention that no solid food was tested. This consistency demands more efforts from the patient so it can be properly ejected to the bolus. It is observed that 77% of the patients in the risk group for oropharyngeal dysphagia (41% of the sample) presented clinical signs of wet voice in the pudding consistency, which indicates content stasis in pharyngeal recess. Wet voice is a term that describes the bubbling sound produced in phonation, indicating stasis of secretions, liquids or food in the laryngeal vestibule[22].

With regard to the statistical chances of patients with CHF being in the risk group for oropharyngeal dysphagia, it can be justified because the pathological mechanism of CHF is directly related to respiratory compromise, once it involves progressive exertional dyspnea, which can evolve to resting dyspnea and orthopnea. Therefore, respiratory difficulty is one of the most frequent CHF symptoms[23], and this is the cause of respiratory exacerbation, and for that, altering/incoordinating the swallowing mechanisms of the patient, especially at the time of apneic pause.

Statistical analysis did not find any differences between the patients with risk for oropharyngeal dysphagia and who presented with nutritional compromise, and this fact can be related to the reduced sample size. An alarming fact is that 75% of the patients participating in the research presented some nutritional compromise or were already malnourished.

This rate is close to the one found in another study, in which 71% of the patients hospitalized in the medical clinic of a university hospital who presented risk for oropharyngeal dysphagia had changes in nutritional status[24].

One study conducted in a large hospital of Santa Catarina points to the rate of 24.3% of malnourished hospitalized patients. Out of these, individuals admitted to the hospital with cancer presented higher rates of malnourishment (53.00%), followed by respiratory diseases (40.00%) and neurological disorders (28.57%)[25].

Oropharyngeal dysphagia is a risk factor for malnourishment and respiratory infections; therefore, the evaluation and treatment for oropharyngeal dysphagia should be included in the routine of care for elderly people, in order to avoid nutritional and respiratory complications[26].

Another data demonstrated by the statistical evaluation are the chances of patients with complaints of xerostomia being in the risk group for oropharyngeal dysphagia, with significance level of p=0.0101.

The dry mouth sensation (xerostomia) can be caused by the hypofunction of salivary glands, which changes the quantity and the quality of the saliva. One of the main functions of the saliva is to humidify the oral cavity, as well as the bolus, in order to facilitate swallowing[27]. Patients with sensation of xerostomia can present difficulties in the oral stage of swallowing, once they cannot properly prepare the bolus, and that interferes in the quality and safety of eating.

It is important to analyze that even though groups recognized in the literature as being risk groups for oropharyngeal dysphagia, like the elderly, patients with neurological conditions, malnourished or the ones presenting clinical signs of broncho-aspiration (cough, wet voice, phlegm and respiratory distress), this study did not find statistical significance in these groups due to the sample limitation.

As in the group of respiratory diseases, COPD[18-20], this study supports what other authors have described as a risk group.

The reduced sample size and the profile of patients assisted at the university hospital are also important, as this hospital is not a reference for patients with neurological conditions and most of the assisted population is composed of elderly people with chronic pulmonary diseases.

CONCLUSION

There is high risk for oropharyngeal dysphagia in patients hospitalized in a university hospital that is more related to respiratory conditions, xerostomia and CHF.

There was no statistically significant relationship between malnourishment and dysphagia, probably because of the high rate of malnourished patients in the university hospital.

The reduced sample did not allow the statistical analysis between the risk for oropharyngeal dysphagia and the variables age, neurological diseases and nutritional compromise.

**DB was responsible for the project, data collection and preparation of the manuscript; CAS was responsible for data collection; MSPHC was responsible for data collection and preparation of the manuscript; MRPR and MLAA and were responsible for contributions in research lineation; MJM was responsible for the statistical analysis and AMF was responsible for the research lineation and preparation of the manuscript.*

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Appendix 1. Risk screening for oropharyngeal dysphagia

HOSPITAL UNIVERSITÁRIO POLYDORO ERNANI DE SÃO TIAGO
UNIVERSIDADE FEDERAL DE SANTA CATARINA
Coordenadoria Especial de Fonoaudiologia
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UFSC

Aval:__

1.

Dados de Identificação – R:_____ Q:_____DA:_____

1.1 Nome:_____

Idade:_____ 1.3 Sexo: ( ) F ( ) M

2. Especialidade: ( ) Neuro ( ) Pneumo ( ) Cardio ( ) Gastro ( ) Nefro ( ) Vascular ( ) Onco-hemato ( ) Clínica- médica ( ) Endócrino ( ) Outra_____	**3. Doença de base:**
4. Motivo da internação:	**5.Outras comorbidades:** **( ) HAS ( ) DM ( ) Encefalopatia ( ) DPOC** **( ) ICC ( ) IAM ( )AVE prévio ( ) tabagista** **( ) etilista ( ) Cirrose ( ) Outra. Qual?_____**
6.Via de alimentação: **( ) via oral ( ) SNE ( ) SOG ( ) gastrostomi** **( ) jejunostomia ( ) parenteral ( ) mista**	**7.Avaliação Nutricional:** **( ) eutrofia ( ) desnutrição ( ) sobrepeso** **( ) desidratação** **Perdeu peso ( ) sim ( ) não Quanto: _____**
8.Escala de coma de Glasgow **( )3 ( )4 ( )5 ( )6 ( )7 ( )8 ( )9 ( )10 ( )11** **( )12 ( )13 ( )14 ( )15**	**9.Respiração:** **( ) ambiente ( ) cateter de O^2 ___l/min** **( ) traqueo- plástica ( )traqueo- metálica** **( ) VMNI _____ ( ) VMI _____** **Tempo de suporte:_____**

10. Problemas gastrointestinais:

( ) Hernia de Hiato ( ) DRGE ( ) Dor retroesternal ( ) Pirose ( ) Halitose ( ) Tumor gastrointestinal ( )Obstipação

11. Problemas relatados de alimentação:

11.1. Se alimenta bem?

_____

11.2. Fez alterações na dieta: postura, consistência, volume, utensílio?

_____

_____

11.3. Tem vontade de comer?

_____

Appendix 1. Continuation

12. AVALIAÇÃO ESTRUTURAL

12.1 Dentição:

a. Número de dentes: Higiene Oral: ( ) bom ( ) Regular ( ) Ruim **b.** Tipo e classe de mordida:

c. Uso de próteses: ( ) não ( ) parcial ( )total

d. Adaptação da prótese: Percepção do paciente ( ) boa ( ) regular ( ) ruim

Impressão da adaptação: ( ) boa ( ) regular ( ) ruim

12.1.1 Presença de xerostomia: ( )sim ( ) não

12.1.2

a) Apresenta anomalias estruturais orofaringolaringeas? ( ) sim ( ) não

b) Apresenta dificuldade para mastigar? ( ) sim ( ) não **c)** Apresenta dificuldade para engolir? ( ) sim ( ) não

d)Sente o alimento parado na garganta? ( ) sim ( ) não

e) Modificou a consistência da dieta? ( ) sim ( ) nãol Modificação: _____

f) Modificou o tempo da refeição? ( ) sim ( ) não l Modificação:_____

12.2 PRAZER/MOTIVAÇÃO PARA ALIMENTAÇÃO

a) Sente dor ao engolir? ( ) sim ( ) não **b)** Sente desconforto ou desprazer ao engolir? ( ) sim ( ) não

c) Apresenta sensação de boca seca? ( ) sim ( ) não

12.3 TEM RISCO PARA ALTERAÇÃO DE DEGLUTIÇÃO? ( ) SIM ( ) NÃO

13. Medicação:

MEDICAMENTO	DOSE	UN	VA	FREQ/DIA	OBS

Appendix 2. Functional feeding evaluation

UNIVERSIDADE FEDERAL DE SANTA CATARINA – UFSC
HOSPITAL UNIVERSITÁRIO POLYDORO ERNANI DE SÃO THIAGO – HU/UFSC
INSTRUMENTO DE COLETA DE DADOS DE ESTADO NUTRICIONAL

1. Dados de identificação

1.1 Nome:_____ Prontuário:_____

Idade:_____ Clínica médica:_____

14. AVALIAÇÃO FUNCIONAL

Alimenta-se sozinho: ( ) sim ( ) não

	Líquido	Néctar	Mel	Pudim	Sólido
Captação do bolo	( ) adequado ( ) lentificado	( ) adequado ( ) lentificado	( ) adequado ( )lentificado	( ) adequado ( ) lentificado	( ) adequado ( ) lentificado
Trânsito oral	( ) adequado ( ) lentificado	( ) adequado ( ) lentificado	( ) adequado ( )lentificado	( ) adequado ( ) lentificado	( ) adequado ( ) lentificado
Vedamento labial	( ) eficiente ( ) não eficiente	( ) eficiente ( ) não eficiente	( ) eficiente ( ) não eficiente	( ) eficiente ( ) não eficiente	( ) eficiente ( ) não eficiente
Escape extra-oral	( ) presente ( ) ausente	( ) presente ( ) ausente	( ) presente ( ) ausente	( ) presente ( ) ausente	( ) presente ( ) ausente
Resíduo em cavidade oral	( ) presente ( ) ausente	( ) presente ( ) ausente	( ) presente ( ) ausente	( ) presente ( ) ausente	( ) presente ( ) ausente
Regurgitação nasal	( ) presente ( ) ausente	( ) presente ( ) ausente	( ) presente ( ) ausente	( ) presente ( ) ausente	( ) presente ( ) ausente
Elevação laríngea	( ) presente ( ) ausente	( ) presente ( ) ausente	( ) presente ( ) ausente	( ) presente ( ) ausente	( ) presente ( ) ausente
Tosse	( ) presente ( ) ausente	( ) presente ( ) ausente	( ) presente ( ) ausente	( ) presente ( ) ausente	( ) presente ( ) ausente
Dispnéia	( ) presente ( ) ausente	( ) presente ( ) ausente	( ) presente ( ) ausente	( ) presente ( ) ausente	( ) presente ( ) ausente
Voz molhada	( ) presente ( ) ausente	( ) presente ( ) ausente	( ) presente ( ) ausente	( ) presente ( ) ausente	( ) presente ( ) ausente
Pigarro	( ) presente ( ) ausente	( ) presente ( ) ausente	( ) presente ( ) ausente	( ) presente ( ) ausente	( ) presente ( ) ausente
Desconforto	( ) presente ( ) ausente	( ) presente ( ) ausente	( ) presente ( ) ausente	( ) presente ( ) ausente	( ) presente ( ) ausente

Appendix 3. Nutritional evaluation

1.3 Sexo: ( ) F ( ) M

Peso:_____

O peso foi verificado com o indivíduo posicionado em pé, no centro da base da balança, descalço, com os braços estendidos do lado do corpo e com roupa leve.

Altura:_____

A altura foi verificada após a pesagem, estando o indivíduo com as costas eretas e os calcanhares juntos.

Appendix 3. Continuation

IMC:_____

Adultos: eutrofia: IMC de 18,50 a 24,99 kg/m²; desnutrição grau I: IMC de 17,00 a 18,49 kg/m²; desnutrição grau II: IMC de 16,00 a 16,99 kg/m²; desnutrição grau III: IMC<16,00 kg/m²; pré-obesidade: IMC de 25,00 a 29,99 kg/m²; obesidade grau I: de 30,00 a 34,99 kg/m²; obesidade grau II: IMC de 35,00 a 39,60 kg/m² e obesidade grau III: IMC>40,00 kg/m² (WHO, 1995 e WHO, 1997).
Idosos: baixo peso: IMC<23,00 kg/m²; peso normal: IMC=23,00 e <28,00 kg/m²; pré-obesidade IMC=28,00 e <30,00 kg/m² e obesidade: IMC≥30,00 kg/m². (OPAS, 2001).

CB: _____

Dos pacientes que não apresentavam condições de pesagem foi obtida a circunferência do braço (CB). A CB foi mensurada utilizando fita métrica com extensão de 1 m, flexível e inelástica, dividida em centímetros e subdivida em milímetros. A CB foi obtida no braço preferencialmente não dominante, estando este estendido e sendo medida a circunferência no ponto médio do braço entre o processo acromial da escápula e o olecrano.

% Adequação da CB:_____

Adequação da CB (%)=CB obtida (cm)x100/CB percentil 50. O estado nutricional foi classificado segundo os seguintes critérios de adequação da CB: desnutrição grave: CB<70%; desnutrição moderada: 70–80%; desnutrição leve: 80–90%; eutrofia: 90–100%; sobrepeso: 110–120%; obesidade: >120% (Blackburn e Thornton, 1979).

Exames bioquímicos:

Hematócrito:_____

Hematócrito (Ht): homens Ht≥44% – normal; 43–37% – reduzido; <37% – muito reduzido; mulheres: Ht≥38% – normal; 37–31% – reduzido; <31% – muito reduzido (Duarte e Castellani, 2002).

Hemoglobina: _____

Hemoglobina (Hb): homens Hb≥14,0 mg/dL – normal; 13,9–12,0 mg/dL – reduzido; <12,0 mg/dL – muito reduzido; mulheres: Hb≥12,0 mg/dL – normal; 11,9–10,0 mg/dL– reduzido; <10,0 mg/dL – muito reduzido.

Contagem total de linfócitos:_____

Contagem total de linfócitos (CTL): 1.200 a 2.000 mm³ – depleção leve; 800 a 1.199 mm³ – depleção moderada; <800 mm³ – depleção grave (Duarte e Castellani, 2002).

Albumina:_____

Albumina: >3,5 g% – normal; 3,0–3,5 g% – depleção leve; 2,4–2,9 g% – depleção moderada; <2,4 g% – depleção grave (Duarte e Castellani, 2002).

Classificação final

( ) comprometimento nutricional: Todos os pacientes classificados com desnutrição grau I, II e III e depleção leve, moderada e grave.

( ) sem risco para desnutrição: Todos classificados como eutrofia, pré-obesidade, obesidade grau I, II e III.