

PREVALENCE OF OROPHARYNGEAL DYSPHAGIA IN STROKE AFTER CARDIAC SURGERY

Prevalência de disfagia orofaríngea no acidente vascular cerebral após cirurgia cardíaca

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ABSTRACT

Purpose: to determine the prevalence of oropharyngeal dysphagia in patients undergoing cardiac surgery and who developed stroke in Public Referral Hospital. **Methods:** a descriptive, retrospective clinical study conducted by collecting data from clinical evaluation of oropharyngeal swallowing protocols in the period november 2010 to november 2011 the 25 protocols for clinical evaluation of oropharyngeal dysphagia were included individuals who did cardiac surgery and who developed postoperative stroke during the study period, and were assisted by the Speech Pathology team. Clinical swallowing assessment was based on clinical tool and swallowing classified as normal and mild, moderate and severe dysphagia. **Results:** 25 (100%) patients, 24 (96%) had dysphagia in clinical evaluation and 1 (4%) did not show. (95% [IC]: 79,6- 99,9) .It was found that 41.66% had severe dysphagia, dysphagia 33.66% moderate and 25% mild dysphagia. **Conclusion:** high prevalence of oropharyngeal dysphagia in patients with stroke after cardiac surgery.

KEYWORDS: Deglutition Disorders; Stroke; Thoracic Surgery

■ INTRODUCTION

Cerebrovascular accident (stroke) remains one of the possible complications of cardiac surgery, with an incidence ranging from 0.4 to 14% in the literature ¹⁻³. Patients undergoing cardiac surgery may have strokes in the perioperative period and up to two years after cardiac surgery ⁴. There are numerous explanations for the occurrence of strokes in cardiac surgery, and the most common is the probability of cardioembolic stroke. It is also

known that risks increase in elderly patients with diabetes mellitus, hypertension, history of stroke or transient ischemic attack, in cases of intraoperative hypotension, arterial fibrillation, increased time of extracorporeal circulation, in peripheral vascular disease and in patients with acute myocardial infarction ¹⁻⁵.

Stroke causes economic and functional impact, as it is already well known and studied that oropharyngeal dysphagia is characterized as a risk symptom, which can lead to aspiration pneumonia, dehydration, malnutrition and death ^{6,7}. The incidence and prevalence of oropharyngeal dysphagia in the stroke population has been studied since the 1980s ⁷, and this varies from 14 to 91% according to the research method used in the study ⁸⁻¹¹. However, little is known about this symptom in the individual undergoing cardiac surgery that has developed stroke.

The population undergoing cardiac surgery presents risks to oropharyngeal dysphagia. Few studies have evaluated swallowing in the postoperative period of cardiac surgery and found the presence of dysphagia in this population, as

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Conflict of interest: non-existent

among its causes, pairs of cranial nerve injury, need for mechanical ventilation for long periods, in addition to cognitive disorders and neurological complications¹²⁻¹⁵. Nonetheless, there are no studies that address swallowing postoperative cardiac surgery conjoined with stroke. It is believed that this population has oropharyngeal dysphagia due to the association of neurological deficit with the risk factors common in the postoperative period of cardiac surgery. Based on this hypothesis and the lack of research in the area, it was decided to perform this study with the aim to determine the prevalence of oropharyngeal dysphagia in patients undergoing cardiac surgery with evolution of stroke in a public referral hospital.

■ METHODS

This is a retrospective descriptive clinical cross-sectional study conducted by collecting data on clinical assessment protocols of oropharyngeal swallowing, evolution and medical record search from the Dante Pazzanese Institute of Cardiology (São Paulo, Brazil) with approval by the research ethics committee of the same institution (protocol nº4129).

The medical records of all patients were analyzed who underwent cardiac surgery and evolved with stroke in the postoperative period, from November 2010 to May 2011 and who were assisted by the speech-language pathology (SLP) team, specializing in dysphagia, after medical request. We excluded patients with a previous diagnosis of stroke.

Data collection was carried out by researchers in medical records and analysis of clinical protocols for clinical evaluation of swallowing that were conducted by the SLP team. The protocol used and the clinical classification of dysphagia severity was carried out according to Silva¹⁶ (1999). For a description of the results, absolute and relative frequencies of oropharyngeal dysphagia were used and confidence intervals (95%) for the relative frequency were calculated.

■ RESULTS

Thirty-seven records were found of patients undergoing cardiac surgery who developed stroke, excluding 17 patients who had a previous diagnosis of stroke and those who had evolved to tracheostomy tube.

The demographic profile of the sample was 56% male, age range 44-80 years, with a mean of 62 years. In relation to cardiac surgery, 14 patients underwent coronary artery bypass grafting (CABG),

nine underwent valve surgery, one individual underwent CABG and valve replacement in the same surgical procedure and another underwent endarterectomy. Observed among the personal case histories were hypertension, dyslipidemia, diabetes mellitus, obesity, smoking or atrial fibrillation. All patients underwent tracheal intubation, and 15 remained intubated for longer than 24 hours.

The time between SLP assessment of swallowing and neurological lesions ranged from 1 to 67 days with a median of 15 days.

During the period investigated, the 25 individuals who developed stroke, 96% ($n = 24$) (95% [CI]: 79.6- 99.9) presented oropharyngeal dysphagia and 4% ($n = 1$) did not.

Of the 24 (100%) individuals who had oropharyngeal dysphagia, 10 (41.66%) had severe dysphagia, 8 (33.33%) moderate and 6 (25%) individuals with mild.

■ DISCUSSION

Oropharyngeal dysphagia in stroke is frequent and has been described by many authors since the 1980s⁷. The incidence and prevalence of this symptom in this population in particular has great variation, possibly due to differences between the methods used for the investigation of oropharyngeal swallowing.

It is known that stroke can be one of the complications in the intraoperative and postoperative periods of cardiac surgery^{1,2,4} and therefore, one of the causes of dysphagia in the cardiology population, in addition to other risk factors for swallowing that are present. However, there were no studies found that investigated the occurrence of dysphagia in this population. Research on oropharyngeal swallowing in populations similar to this study has focused on verifying multiple risk factors for oropharyngeal dysphagia^{13,15} and especially the impact of orotracheal intubation (OTI) for swallowing in the population undergoing cardiac surgery^{14,17}.

The current study examined the swallowing of patients diagnosed with stroke postoperative to cardiac surgery and found high prevalence of dysphagia with clinical signs suggestive of penetration and/or tracheal laryngotracheal aspiration. These results are consistent with the literature, where laryngotracheal aspiration was frequently found by clinical methods or through objective swallowing investigation in the population undergoing cardiac surgery^{12,13,15}.

Oropharyngeal dysphagia following cardiac surgery has been described in the literature¹²⁻¹⁵ having multiple causes for the occurrence of this swallowing dysfunction, in addition to possible

cardiac surgery neurological sequela, there is still need for OTI, mechanical ventilation^{13,14} and the use intraoperative transesophageal echocardiography cited by some of the studies that have linked oropharyngeal dysphagia to oropharyngeal and esophageal lesions^{18,19}, among other factors.

One of predictive risk factors for oropharyngeal dysphagia in the population undergoing cardiac surgery often cited in studies is the need for OTI. It is known that all patients undergoing cardiac surgery requiring OTI and mechanical ventilation (OTI for a prolonged period), can be considered a risk factor for dysphagia or even an independent predictor of postextubation dysphagia. A recent study evaluated the swallowing of patients in the postoperative period of cardiac surgery, noting that dysphagia was more frequent in the group submitted to more than 48 hours of OTI¹⁷. Nevertheless, in this study, OTI was not evaluated in isolation, as most patients requiring prolonged OTI, as pointed out in the series, may have impacted the high prevalence and the degree of dysphagia severity.

Another factor considered predictive of risk for dysphagia in cardiac surgery is advanced age¹⁵. In this study, although age had not been an analyzed variable, the age range of the sample shows that the mean was 62 years, making this a factor that also may have affected the high prevalence of oropharyngeal dysphagia. The elderly have physiological changes of the structures involved in the swallowing process, and these changes are risk factors for oropharyngeal dysphagia, which may increase in the presence of acute disease, comorbidities and major surgeries²⁰.

Besides the need for OTI and the advanced age of the population undergoing cardiac surgery, another determining factor for oropharyngeal dysphagia and the degree of dysfunctional severity treated is the type of brain lesion elapsed from cardiac surgery. In the stroke subtypes, the extent and exact location of hemispheric brain lesion in this study population were not specified, with stroke being known as the most common in cardiac surgery and ischemic cardioembolism⁴.

Lesions from cardiac embolism usually cause artery blockage whose territory is usually extensive, as in middle cerebral artery or multiple territories. The clinical characteristics of patients with embolic stroke differ from patients with lacunar infarcts, with neurological deficits related to broader embolism while those associated with lacunar infarcts usually involve motor or pure sensory deficits²¹. Studies that correlated dysphagia with the location of brain lesion observed higher incidence of dysphagia in large lesions of anterior circulation, unlike lacunar infarcts, in which the changes are limb weakness, with dysphagia and cognitive changes less observed^{22,23}.

This study had limitations due to the swallowing assessment being performed by clinical method only. Another issue is that the aim of the study was to only determine the prevalence of dysphagia after stroke resulting from cardiac surgery, thus requiring new designs that can identify the prevalence of dysphagia in patients undergoing cardiac surgery and correlating multiple risk predictors present in this population.

Nonetheless, it is clear that the risk of dysphagia in patients who develop stroke in cardiac surgery is high, since in addition to the neurological complications of the stroke itself, these patients have risk factors associated with cardiac surgery and are already considered at risk for oropharyngeal dysphagia in previous studies.

It is therefore critical that all staff of the cardiology service be trained to screen for this population and that there is the presence of a specialized team in dysphagia to finish early diagnosis and for adequate treatment, reducing the risk of complications.

■ CONCLUSION

We observed in this study that the prevalence and oropharyngeal dysphagia in patients who developed stroke after cardiac surgery was high.

RESUMO

Objetivo: determinar a prevalência de disfagia orofaríngea em indivíduos submetidos à cirurgia cardíaca e que evoluíram com Acidente Vascular Cerebral em Hospital Público de Referência. **Métodos:** estudo clínico descritivo, retrospectivo, realizado por meio da coleta de dados de protocolos de avaliação clínica da deglutição orofaríngea, no período de novembro de 2010 a novembro de 2011. Foram incluídos os 25 protocolos de avaliação clínica para disfagia orofaríngea de indivíduos que fizeram cirurgia cardíaca e evoluíram com Acidente Vascular Cerebral no pós-operatório, durante o período estudado, e que foram assistidos pela equipe de Fonoaudiologia. A avaliação clínica da deglutição foi baseada em instrumento clínico e a deglutição classificada como normal, disfagia leve, moderada e grave. **Resultados:** dos 25 (100%) indivíduos, 24 (96%) apresentaram algum grau de disfagia orofaríngea na avaliação clínica. (95% [IC]: 79,6- 99,9). Constatou-se que 41,66% apresentaram disfagia grave, 33,66% disfagia moderada e 25% disfagia leve. **Conclusão:** é alta a prevalência de disfagia orofaríngea em indivíduos com Acidente Vascular Cerebral após cirurgia cardíaca.

DESCRIPTORIOS: Transtornos de Deglutição; Acidente Vascular Cerebral; Cirurgia Torácica

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Received on: December 19, 2014

Accepted on: May 15, 2015

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