



ORIGINAL ARTICLE

Dysphagia progression and swallowing management in Parkinson's disease: an observational study^{☆,☆☆}



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Received 1 June 2013; accepted 3 March 2014

Available online 8 October 2014

KEYWORDS

Parkinson disease;
Deglutition;
Disease progression;
Deglutition disorders;
Speech therapy

Abstract

Introduction: Dysphagia is relatively common in individuals with neurological disorders.

Objective: To describe the swallowing management and investigate associated factors with swallowing in a case series of patients with Parkinson's disease.

Methods: It is a long-term study with 24 patients. The patients were observed in a five-year period (2006–2011). They underwent Fiberoptic Endoscopic Evaluation of Swallowing, Functional Oral Intake Scale and therapeutic intervention every three months. In the therapeutic intervention they received orientation about exercises to improve swallowing. The Chi-square, Kruskal–Wallis and Fisher's tests were used. The period of time for improvement or worsening of swallowing was described by Kaplan–Meier analysis.

Results: During the follow-up, ten patients improved, five stayed the same and nine worsened their swallowing functionality. The median time for improvement was ten months. Prior to the worsening there was a median time of 33 months of follow-up. There was no associated factor with improvement or worsening of swallowing. The maneuvers frequently indicated in therapeutic intervention were: chin-tuck, bolus consistency, bolus effect, strengthening-tongue, multiple swallows and vocal exercises.

Conclusion: The swallowing management was characterized by swallowing assessment every three months with indication of compensatory and rehabilitation maneuvers, aiming to maintain the oral feeding without risks. There was no associated factor with swallowing functionality in this case series.

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[☆] Please cite this article as: Luchesi KF, Kitamura S, Mourão LF. Dysphagia progression and swallowing management in Parkinson's disease: an observational study. Braz J Otorhinolaryngol. 2015;81:24–30.

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PALAVRAS-CHAVE

Doença de Parkinson;
 Deglutição;
 Progressão da
 doença;
 Transtornos de
 deglutição;
 Fonoaterapia

Progressão e tratamento da disfagia na doença de Parkinson: estudo observacional**Resumo**

Introdução: A disfagia é frequente em indivíduos com distúrbios neurológicos.

Objetivo: Descrever o tratamento da disfagia e investigar fatores associados à deglutição em uma série de casos com doença de Parkinson.

Método: Trata-se de um estudo longitudinal com 24 pacientes acompanhados por um período de cinco anos (2006–2011). Todos foram submetidos à videoendoscopia da deglutição, classificação de acordo com a Functional Oral Intake Scale (FOIS) e receberam orientações sobre o tratamento da deglutição a cada três meses. As orientações do tratamento da deglutição compreenderam exercícios para a melhora da deglutição. Os testes Qui-quadrado, Kruskal–Wallis e Fisher foram utilizados para investigar associação entre o estado da deglutição e variáveis clínicas.

Resultados: Durante o acompanhamento, dez pacientes melhoraram, cinco mantiveram e nove pioraram a funcionalidade da deglutição. Uma mediana de dez meses foi observada até a melhora na deglutição ser obtida. Foi observada uma mediana de 33 meses de acompanhamento até a piora na deglutição. As manobras mais frequentemente indicadas na terapia foram: queixo para baixo, mudança na consistência e no efeito do bolo, exercícios para força e mobilidade de língua, deglutições múltiplas e exercícios vocais.

Conclusão: O tratamento da disfagia foi caracterizado por avaliações trimestrais da deglutição com indicação de manobras compensatórias e reabilitadoras. Nesta casuística não foram identificados fatores associados às mudanças na funcionalidade da deglutição.

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Introduction

Dysphagia is common in individuals with neurological disorders. It affects food intake, which may lead to complications such as choking, malnutrition, and pulmonary aspiration.¹

Parkinson's disease (PD) is one of the most common neurodegenerative disease in the elderly population, with a worldwide incidence between 1 and 20 per 1000 people/year.^{2,3} It is characterized by impairment of basal ganglia in voluntary movements, causing resting tremor, rigidity, akinesia (or bradykinesia), and postural instability.^{2,4}

Dysphagia is very common in PD, affecting over 80% of individuals, reflecting the underlying motor impairments and the extent of the disease's progression.⁵ The swallowing difficulties most frequently associated with PD are related to the oral and pharyngeal phase, resulting in abnormal bolus formation, delayed swallowing reflex, and prolongation of the pharyngeal transit time, with repetitive swallows to clear the throat.⁶

These dysphagia-related impairments have a direct influence on the nutritional and health status of the patients, and are associated with increased morbidity and mortality.^{7,8} However, few studies have described the progression of dysphagia and its severity in PD.⁹ There is very little information regarding the temporal aspect of dysphagia progression in PD.

Knowledge on dysphagia progression in PD could decrease the risk of aspiration pneumonia, consequently decreasing the risk of death, since it is one of the most frequent causes of death in this patients.^{10,11} It can also orient physicians

and therapists on what to expect of their patients and which treatment may be necessary over time.

Swallowing management, through the utilization of methods that compensate for the alterations in the swallowing process, aims to preserve a safe oral feeding as long as possible. Swallowing management is based on maneuvers that, according to Crary,¹² can be categorized as compensatory and rehabilitation maneuvers. Compensatory maneuvers refer to behavioral intervention in dysphagia, characterized by dietary modifications, changes in the manner of administration of the diet, changes in the patient position, and alterations in the mechanism of swallowing. These maneuvers, such as chin-tuck, head rotation, head tilt, head back, among others, are commonly known as postural maneuvers. Their purpose is to direct the bolus and modify the flow velocity of the bolus. The maneuvers characterized by diet modifications promote changes in sensory stimuli, as modifying volume and consistency of the food may alter sensory input. The modification of the swallowing mechanism requires changes in swallowing pattern, regarding muscle strength, range of motion, and coordination of events in swallowing, for example effort swallowing, supraglottic maneuver, multiple swallows, between others.

Among rehabilitation maneuvers are the sensor-motor oral exercises, which enable modifications of force, length, and range of motion of the structures involved in the oral cavity, pharynx, and larynx. Among the most used maneuvers are the shaker maneuver, lingual control, vocal exercises, and pharyngeal exercises.

This article aimed to describe the swallowing management and investigated associated factors with swallowing functionality in a case series of patients with PD.

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