



Research Week 2020

The Prevalence of Swallowing Problems in Patients with Parkinson's Disease Prior to Deep Brain Stimulation

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Keywords

Parkinson's Disease, Deep Brain Stimulation, Surgery, Swallowing

Abstract

Background

Parkinson's Disease (PD) is a progressive neurodegenerative disorder affecting over 10 million people worldwide. Swallowing problems are common and aspiration pneumonia is the leading cause of death in this population. Deep brain stimulation (DBS) is a surgical method for managing the motor symptoms of PD when pharmacological management begins to fail. As DBS may have a deleterious effect on swallowing, it is important to identify baseline dysfunction, but no consensus regarding screening for abnormalities exists. This study was undertaken to identify the prevalence and characteristics of abnormal swallowing function prior to DBS.

Method

57 patients with idiopathic PD and no confounding medical conditions were examined consecutively prior to DBS. The patients were predominantly male (70%) with an average age of 65 years and an average PD duration of 10 years. Three screening measures, including the Swallowing Disturbance Questionnaire (SDQ), Peak Cough Flow (PCF), and the Timed Water Swallow Test (TWST), were completed prior to undergoing swallowing evaluation on videofluoroscopy.

Results

The prevalence of abnormal findings was as follows: 35% had abnormal symptoms on the SDQ; 45% had abnormal swallowing efficiency and 23% had aspiration symptoms on the WST; 57% had abnormal cough strength on the PCF; 35% had reduced airway protection and 18% had aspiration on videofluoroscopy. None of the screening measures was associated with reduced airway protection or aspiration on videofluoroscopy. Of the demographic and disease-related characteristics, only age was associated with reduced airway protection ($r = .278$, $p = .036$) and aspiration ($r = .301$, $p = .023$).

Conclusions

Abnormal swallowing function is common in patients about to undergo DBS. Unfortunately, no screening measure we utilized significantly predicted abnormal airway protection on videofluoroscopy. As such, radiographic testing may be the most appropriate standard of care for preoperative work-up, particularly in older patients.