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Severe Swallowing Apraxia after Stroke in a Patient with Prior TBI – Case Report

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Introduction

Swallowing apraxia is characterized by dysfunction in the oral phase due to deficits in the coordination of ton gue, lip, and jaw movements, leading to a delay in bolus transfer prior to initiation of the swallowing process. It occurs without motor weakness, sensory loss, or cognitive impairment. We report a case of severe swallow ing apraxia of the rippling type following an ischemic stroke in the left cerebral hemisphere after an old traum atic brain injury (TBI).

Methods

A 59-year-old male with a history of old TBI 30 years ago presented to the emergency department due to a decreased level of consciousness. Brain magnetic resonance imaging revealed a new ischemic stroke and hemorrhagic transformation involving the left middle cerebral artery (MCA) territory, including the insula, along with multifocal encephalomalacia in both frontal lobes. Swallowing function was assessed using videofluoroscopic swallowing study (VFSS) and fiberoptic endoscopic evaluation of swallowing (FEES). Follow-up VFSS was performed at 4, 7, and 10 months after onset.

Results

On VFSS, the patient exhibited persistent tongue movements to explore and mix the food, along with mastication, without propelling the bolus posteriorly, causing the food to remain in the anterior oral cavity for 1 minute and 45 seconds, leading to test discontinuation. The patient gestured to indicate that the food was not passing down and made spontaneous attempts to tilt his head backward to facilitate swallowing. Premature bolus loss was not observed, preventing evaluation of the pharyngeal and esophageal phases.

FEES was performed by administering 5 cc of milk, and premature spillage was observed, allowing assessment of the pharyngeal phase. The examination revealed normal laryngeal elevation and pharyngeal swallow triggering, with vallecular and pyriform sinus residue less than 10%. No penetration or aspiration was observed.

Accordingly, an oral diet was attempted after L-tube removal; however, the patient exhibited persistent bolus retention in the oral cavity, leading to insufficient oral intake, resulting in L-tube reinsertion.

Follow-up VFSS at 4 months revealed that the patient swallowed in small portions using premature bolus loss, taking 1 min 20 sec to clear the oral cavity. At 7-month follow-up, swallowing delay had improved to 20-30 sec. However, persistent swallowing delay was still observed at 10 months. Notably, massive swallowing via cup drinking resulted in significant improvement, with the bolus successfully transported from the oral cavity to the esophagus within 3 sec.

Conclusions

We present a case of severe swallowing apraxia of the rippling type identified through VFSS, with FEES co nfirming the absence of pharyngeal phase deficits, thereby enabling an early trial of oral feeding. The mass ive swallowing method may be considered a strategic compensatory technique to improve food intake in pa tients with swallowing apraxia.

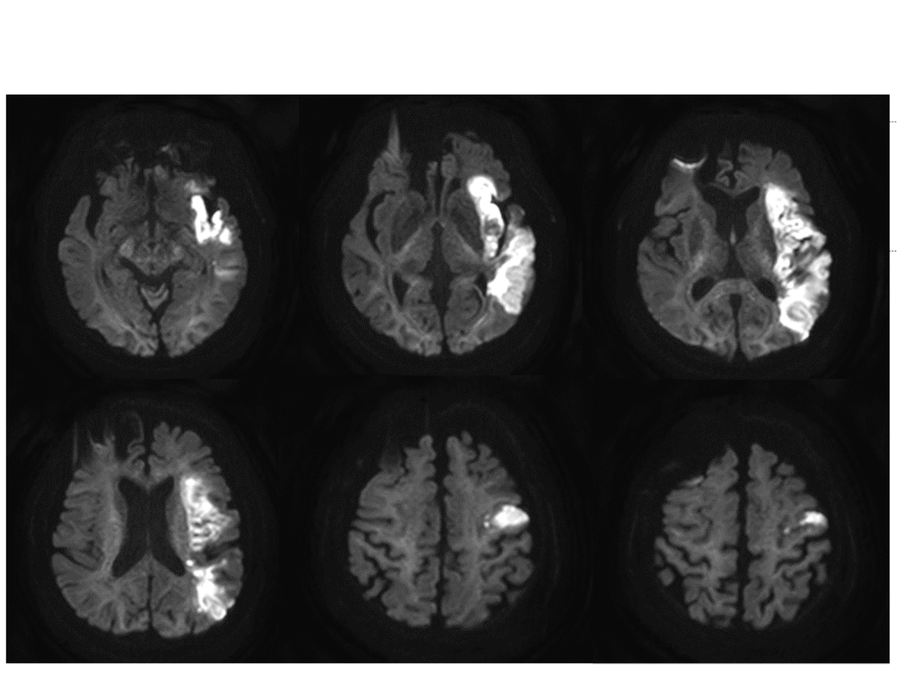

Fig. 1. Brain Magnetic Resonance Imaging of a 59-year-old male patient with Severe swallowing apraxia

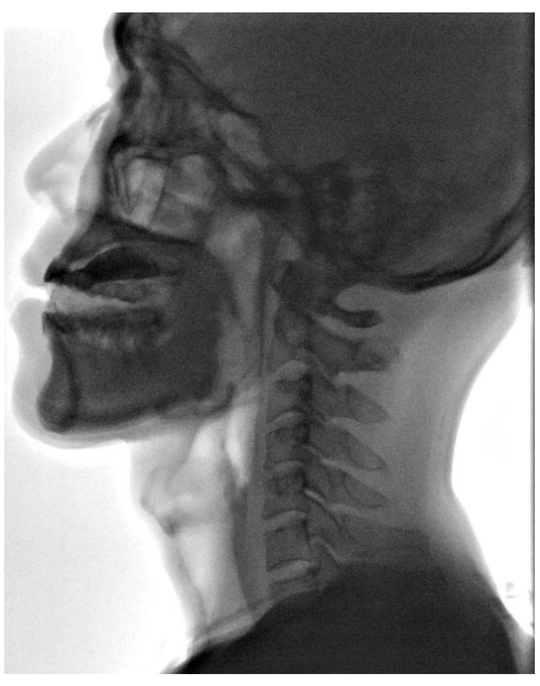

Fig. 2. Videofluoroscopic swallowing study showing the food remaining in the anterior oral cavity without propelling the bolus posteriorly

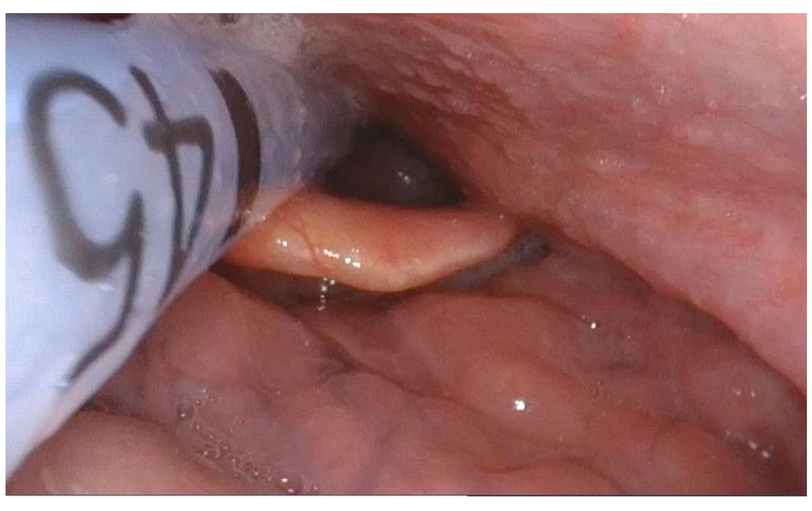

Fig. 3. Fiberoptic endoscopic evaluation of swallowing revealing normal laryngeal elevation and pharyngeal swallow triggering, with vallecular and pyriform sinus residue measuring less than 10%