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Cranial Mass as a Rare Cause of Dysphagia

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Abstract

We present a case of an inferior posterior fossa like meningioma which highlights the importance of the otolaryngologic and neurologic exam when evaluating a patient with dysphagia. A 71-year-old woman presented with a 5-month history of progressive dysphagia, chronic cough. Prior gastroenterological and laryngological workup was unrevealing. **Keywords:** Dysphagia, Cranial mass, Swallow disease, Esophagogastroduodenoscopies

Clinical Presentation

A 71-year-old woman presented to us with a 5-month history of progressive dysphagia and productive cough. At the time of presentation, she could no longer tolerate her oral secretions. Within several seconds of attempting to swallow, she experienced globus and bouts of involuntary coughing resulting in regurgitation of ingested contents. Her reduced dietary intake resulted in a reported 12-pound weight loss over a period of 5 months. Before



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presenting to our institution, she had an extensive workup in several centres where esophagogastroduodenoscopies (EGD), laryngoscopies, and Bronchoscopies were performed. These tests were non-diagnostic. Two barium swallow evaluations were attempted but aborted because of aspiration. She was diagnosed with gastroesophageal reflux disease and asthma, but pharmacotherapy with proton pump inhibitors and bronchodilators did not relieve her symptoms. Cranial nerve exam demonstrated an absent gag reflex bilaterally, but was otherwise normal. Also, there was a mass with an approximate size of 3.5 cm in the thyroid gland. There was suspected malignancy in the fine-needle aspiration biopsy. Despite being recommended, the patient did not consent to surgical operation. In addition, some other reasons including advanced age, presence of diabetes mellitus and cardiac disease precluded surgical intervention.

Discussion

A basic understanding of swallow physiology is an essential part of the evaluation of dysphagia. Swallowing consists of three distinct phases: oral, pharyngeal, and oesophageal. In the oral stage, proper mastication and salivary production are the crucial processes required to create a suitable bolus for the latter stages of swallowing and digestion (1,2). In the pharyngeal stage, there exists a neuromuscular coordination for the sake of distal advancement of the bolus, protection of the airway, and normal relaxation of the upper oesophageal sphincter (UES) (2,3). As for the oesophageal stage, it commences just distal to the UES and functions for a proper peristaltic propulsion of the bolus merged with suitable relaxation of the lower oesophageal sphincter (2,4). Dysphagia may result from any disorder to take place within any of these three stages. The differential diagnosis of dysphagia is highly



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comprehensive. The diagnosis of dysphagia can be handled under two primary categories. oropharyngeal and oesophageal dysphagia, both of which can be further divided into neuromuscular and structural aetiologies. The oropharyngeal dysphagia resulting from neuromuscular diseases is distinguished by discoordinated swallowing secondary to strokes, degenerative neurologic diseases, peripheral neuropathies, or other intrinsic muscular abnormalities (2,5). The oropharyngeal dysphagia resulting from structural lesions include neoplasms, webs, and diverticulum (2). In the same way, oesophageal dysphagia can also be grouped into neuromuscular disorders such as achalasia, spastic motor disease, and scleroderma, or structural lesions such as neoplasms, strictures, webs, and foreign bodies (4). The initial evaluation of a dysphagic patient requires a careful history. In the patients with oropharyngeal dysphagia, common complaints include the difficulty initiating a swallow or the symptoms immediately upon swallow initiation. Also, coughing, choking, and possible aspiration may accompany these symptoms. In localizing their symptoms the patients usually point to the cervical region (2,6-8). On the other hand, patients with oesophageal dysphagia complain of the symptoms which come out several seconds after initiating a swallow that commonly localize to the suprasternal or retrosternal area (7-9). Helpful diagnostic methods in a patient with dysphagia include flexible laryngoscopy, barium oesophagram, and gastroesophageal endoscopy. Flexible laryngoscopy becomes essential in the evaluation of a patient complaining of oropharyngeal dysphagia in that it can easily identify any masses, lesions, or hypopharyngeal pooling of secretions or food (10,11). A barium study is an effective method with few complications and can detect oesophageal motility as well as obstruction (12). Gastroesophageal endoscopy is required for the evaluation and the possible



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biopsy of any masses or lesions detected by barium study. Moreover, the diagnosis may have to be broadened through the use of studies such as oesophageal manometry, videofluoroscopy, pH monitoring, or additional imaging studies (2,10,13). Our patient presented with vague neurologic findings, which led us to broaden our differential diagnosis to include central nervous processes. Also, a CT scan led us to perform additional studies such as a swallow study and flexible laryngoscopy, which were found to be abnormal yet nondiagnostic but increased our clinical suspicion of a neurologic process. Neurogenic dysphagia generally develops secondary to stroke, (14) but may also result from brain stem lesions, myasthenia gravis, multiple sclerosis, Parkinson's disease and other degenerative conditions. Our patient's CT revealed in the inferior posterior fossa a 3x3x2-cm wellcircumscribed, heterogeneous and hyperdense large mass with calcifications, partially extending from the right cerebellopontine angle through the spinal canal and compressing the brain stem on the right anterolateral (Fig. 1).

We present an unusual case of dysphagia caused by a large mass at the inferior posterior fossa for which we could not define the pathology just because we could not perform any surgery for the patient.

Conclusion

We conclude that for the patients that present with dysphagia but do not reveal any specific pathology in physical examination, flexible laryngoscopy, or barium oesophagram, cranial pathology should be the subsequent step and should be evaluated with a neurologist.





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Figure 1. The CT imaging revealing the large mass in the inferior posterior fossa

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