

Diffuse Esophageal Spasm: A Case Study

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Abstract. The esophagus functions to transport food and liquid from the pharynx to the stomach. It is comprised of striated and smooth muscle and has specialized sphincters at its proximal (upper) and distal (lower) ends. Its muscle action produces the sequential, coordinated peristalsis that propels food and liquid distally. This peristaltic movement needs to have coordinated primary and secondary contractions. When these do not occur, tertiary contractions result. These contractions are dysfunctional and create a motility disorder of the esophagus. One such motility disorder is Diffuse Esophageal Spasm (DES). Symptoms of DES include atypical chest pain that can mimic angina, and dysphagia (swallowing difficulty), particularly a feeling of food or liquid being caught in the throat. DES is best confirmed through manometry, a procedure that assesses pressure, timing, and intensity of esophageal muscle movement, and radiography, or imaging, of the esophagus. The etiology of DES remains elusive. Treatment varies. This case study focuses on the diagnosis and successful treatment of an older adult with DES through speech-language pathology.

1. Introduction

Adequate hydration and nutrition is essential for brain and body function. An integral component in maintaining hydration and nutrition is a safe and effective swallow. This entails placement of an appropriate amount of food or liquid in the mouth, its coordinated management within the mouth, and its transfer through the pharynx into the esophagus. The esophagus is comprised of striated and smooth muscle and has specialized sphincters at its proximal (upper) and distal (lower) ends. Its muscle action produces the sequential, coordinated peristalsis that propels each bolus of food and liquid distally to the stomach for digestion. This peristaltic movement needs to have coordinated primary and secondary contractions. When these do not occur, tertiary contractions result. These contractions are dysfunctional and create a motility disorder of the esophagus. One such motility disorder is Diffuse Esophageal Spasm (DES).^{1,2} DES is best diagnosed using manometry, a procedure that assesses the pressure, timing, and intensity of esophageal muscle movement, in combination with radiography to image the esophagus. Unlike other esophageal motility disorders, DES is characterized by high amplitude (hyperkinetic) nonperistaltic or simultaneous, contractions. These contractions occur in more than 30% of wet swallows during manometry and can give the esophagus a characteristic corkscrew appearance when it is imaged.^{3,4} The etiology of the disorder is unknown but postviral, infectious, environmental, anxiety-related, and genetic factors have been considered.^{5,6} Some esophageal motility disorders have been associated with diabetes mellitus and Parkinson's Disease.^{2,7} Increasing age also may be a factor.⁵ Treatment approaches for persons with DES include surgical myotomy, muscle dilation, and the injection of botulinum toxin. Pharmacological protocols also are used, such as sildenafil to relax smooth muscle, and antidepressants and selective serotonin reuptake inhibitors to manage pain.² Behavioral techniques to alleviate an accompanying dysphagia also are warranted.² This case study describes the successful treatment of DES in an older woman through speech-language pathology intervention.

2. Case Presentation: AS

History. AS, an 85-year-old female residing in a continuing care community, was referred for assessment of her swallowing after she choked on pieces of banana and complained of throat pain at approximately the level of the thoracic inlet. Prior to this event, she stated she had been eating well and drinking without difficulty. Past medical history included: non-insulin dependent diabetes mellitus; dyslipidemia; cerebrovascular accident (CVA); bipolar affective disorder; chronic anemia; gastroesophageal reflux disease (GERD); osteoporosis; Parkinson's Disease; and arthritis. There was no history of tobacco, alcohol, or illicit drug use. Medications on admission to the hospital were: carbidopa/levodopa; glyburide; omeprazole; lithium; ropinirole; tramadol; and risperidone. She was alert, able to converse, and oriented to person, place, and time.

Chest x-ray documented no acute cardiopulmonary abnormalities but did show an apparent mass in the upper mediastinum near the aortic arch. CT scans (without contrast) of the chest and cervical spine confirmed that the

mass was due to food and fluid debris in a dilated (almost 3.5 cm) esophagus. An upper gastrointestinal (GI) swallow study and esophagogastroduodenoscopy (EGD) confirmed normal esophageal and gastric mucosa but with an abnormally dilated esophagus. The lumen of the distal esophagus was narrowed and patulous with a corkscrew appearance. The narrowing distended over time. Irregular tertiary contractions and peristaltic movements were evident from the level of the aortic arch inferiorly to the gastroesophageal (GE) junction. The lower esophageal sphincter was wide open and easily relaxed, indicating achalasia was not an underlying issue at this time. The duodenal bulb and first, second, and third portions of the duodenum were normal. Multiple cysts were noted in the right and left lobes of the thyroid gland with further evaluation recommended to rule out neoplasms.

Diagnosis. Patulous esophagus with corkscrew appearance; associated acute dysphagia. Endoscopic findings of the esophageal mucosa were considered normal and typical for age which is characteristic of DES.⁵

Treatment in hospital. Instructions to maintain slow rate of eating with small bites using mechanical soft diet and thin liquids under the guidance of the speech-language pathologist (SLP); no surgical or drug intervention.

Outcome of 4-day hospital stay. Documented safe swallow with no signs of aspiration or reflux. Home medications for bipolar disorder were continued. Blood sugars were monitored and AS did well without any oral hypoglycemics. Discharged in good condition.

Outcome of return to residence. Continued intervention with SLP for 2 weeks to assist AS with her confusion over what food consistencies were safe for her to eat; for verbal cueing to use compensatory muscle relaxant strategies effectively; and for the education of new staff regarding her care. Three months after hospitalization, AS remains symptom free.

3. Conclusions. AS, an 85-year-old female, was diagnosed with Diffuse Esophageal Spasm of the corkscrew type and acute dysphagia. Potential etiological factors that apply to AS include: age, diabetes mellitus, Parkinson's Disease, and bipolar disorder. The successful outcome in this case documents the positive and direct role speech-language pathologists can play in the treatment of adults with esophageal dysfunction.

4. Acknowledgements

Sincere thanks go to AS and her family and to Debbie Hollinger, speech-language pathologist, for enabling access to this interesting case.

5. References

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