CLINICAL VIGNETTE

A Unique Case of Dysphagia in an Elderly Woman

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Case report

A 90-year-old women with a significant cardiac history including coronary artery disease status-post CABG, sick sinus syndrome with pacemaker, atrial fibrillation, and diastolic heart failure was hospitalized for dysphagia. The symptoms progressed over a few weeks but more abruptly resulted in an episode of food impaction. Barium esophagram showed marked retention of contrast in the esophagus with fixed narrowing in the diaphragmatic crus and level of the proximal stomach, possibly due to external compression versus secondary achalasia. However, manometry showed aperistalsis with hypotensive lower esophageal sphincter that was not compatible with achalasia. Esophagogastroduodenoscopy confirmed food bolus impaction extending from the stomach all the way to the upper esophageal sphincter. Severe esophagitis due to prolonged retained food was noted. The endoscope was finally advanced into the stomach where food was found. Imaging revealed external compression of the esophagus by a tortuous aorta without thoracic aneurysm. Due to advanced age and comorbidities, the patient was not a candidate for surgery. She was managed conservatively with dietary adjustments and cardiovascular risk factors reduction and responded generally well.

This is a case of an elderly woman with dysphagia and food impaction who likely had a rare condition called dysphagia aortica. Dysphagia aortica is a mechanical dysphagia caused by compression of the esophagus by the dilated aorta. It occurs more commonly in elderly women with short stature, kyphosis, hypertension, and cardiovascular disease. The possibility of extrinsic vascular compression of the esophagus should be considered in elderly patients with cardiovascular disease who present with dysphagia.

Discussion

Dysphagia aortica was the term first used by Pape in 1932 to describe difficulty in swallowing caused by external compression from an ectatic, tortuous, or aneurysmal aorta.[1] The dilated aorta can cause extrinsic compression on the lower esophagus, leading to dysphagia. Although this is relatively rare, it is more commonly found in elderly women with short stature, kyphosis, and hypertension.[2] Some cases may start with esophageal movement from gastroesophageal reflux disease and nerve compression, causing progression of the condition.

Dysphagia appears more frequently in the elderly population. Approximately 7-10% of individuals over 50 years of age and 30-40% of nursing home residents experience dysphagia.[3,4] The categories of dysphagia can be divided into two types: motor and mechanical. Motor dysphagia relates to weakened peristalsis and impaired relaxation of the sphincter muscle and mechanical dysphagia relates to intrinsic or extrinsic compression.[5,6] More commonly, dysphagia occurs in esophageal disease. However, when esophageal dysfunction or abnormalities is lacking, external causes of dysphagia should be considered.

Dysphagia in patients with thoracic disease often arises from obstruction or extensive compression of the esophagus. Extrinsic compression caused by vascular abnormalities leads to an atypical presentation of dysphagia, such as this case. Certain vascular anomalies can include an aorta that is ectatic, torturous, atherosclerotic or aneurysmatic, and are often associated with age-related degeneration.[1]

The diagnosis of dysphagia aortica can be challenging and may be considered a diagnosis of exclusion. There is no gold standard for the diagnosis. Some symptoms may include gradual intolerance to solids or food impaction. Results of imaging and other diagnostic studies can provide a high index of suspicion. The workup includes a combination of radiologic, endoscopic, and manometric studies. The standard chest CT may show a dilated and tortuous aorta or an enlarged aortic arch. Barium swallow can show partial obstruction, poor esophageal motility, and pulsatile movement of barium synchronous with aortic pulsations.[7] Dilation of the aortic arch and the tortuous dilated aorta can be seen in chest radiographs and the dilation of the thoracic aorta and the compression of the esophagus are shown in chest computed tomography.[7,8] Endoscopy may show extensive compression or blockage of the esophagus and an obstruction aortic vascular barrier. If extrinsic vascular compression is noted at endoscopy, chest computed tomography or arch aortography should be considered to exclude the presence of abnormal vascular rings or dysphagia lusoria – a different cause of dysphagia due to the aberrant origin of the right subclavian artery.[9,10] Manometry may show a high –pressure band with movement synchronous with cardiac pulsation, although such findings may not be specific.

Although the barium swallow test is necessary for the evaluation of dysphagia aortica, false negatives can be common due to the contrast medium used.[11] Furthermore, vascular pulsation can be seen in otherwise normal esophagus, and the compression of the esophagus by the aorta may not be seen on

standard computed tomography.[5] Dysphagia aortica can also be frequently associated with gastroesophageal reflux disease and other esophageal motility disorders and thus is not easy to confirm as primary cause of the dysphagia.[5]

The treatment for dysphagia aortica varies and depends on the symptomatology. For cases of mild dysphagia, conservative measures are recommended with dietary and behavioral modifications including pureed or liquid foods. Additionally, treatment of hypertension and cardiovascular risk factors are strongly recommended. The use of prokinetic agents and proton pump inhibitors may also be helpful. Moderate cases and troublesome symptoms may respond to esophageal dilatation.[12]

More severe cases may require surgery. Surgical options may include: transposition of the distal esophagus, separation of the distal esophagus from the aorta, esophagomyotomy, division of the right crus of the diaphragm, aortic resection, and repair of an aneurysm. For patients who may not be surgical candidates, alternative interventions may include percutaneous endoscopic gastrostomy, esophageal dilation with bougies or stent.[5,6] However, the risks of invasive procedures and interventions should be considered when discussing treatment options. The outcome may not necessarily improve quality of life and result in further complications, so this should be evaluated on a case by case basis and balanced with the individual's goals and expectations.

In this patient, surgery was not advised due to her advanced age and multiple co-morbidities. Dietary modification and conservative management was recommended. The patient remained on a pureed and liquid diet and her cardiovascular conditions and risk factors were treated. It is important to treat any underlying cardiovascular disease to improve the symptoms of dysphagia aortica.

Conclusion

Dysphagia aortica is an uncommon condition defined by the difficulty in swallowing caused by extrinsic compression of the esophagus due to an ectatic, tortuous, or aneurysmatic atherosclerotic thoracic aorta. Although this condition is rare, it is present more in elderly women with short stature, kyphosis, hypertension and cardiovascular disease. Specifically, dysphagia aortica should be considered in the differential diagnosis as an atypical cause of dysphagia in the elderly with known cardiovascular disease. Therefore, unexplained dysphagia should prompt further investigation and a higher level of suspicion for a potential alternative diagnosis.

References

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