An Unusual Cause of Dysphagia

Patricia L. Pringle, MD; Vinit Baliyan, MD; Doreen Defaria Yeh, MD; Joe Simeone, MD; Brian Ghoshhajra, MD, MBA

Clinical History
An elderly man with a complex cardiac history and gastric cancer status post subtotal gastrectomy presented with frequent aspirations. After his gastrectomy three decades prior, the patient had no problem swallowing and eating. After an admission three months prior for congestive heart failure, the patient began to eat his meals very slowly and lost 15 pounds. He eventually developed a persistent cough, which prompted a chest CT scan.

His cardiovascular history included remote anteroseptal infarct and subsequent ventricular aneurysm status post ascending aorta replacement, aortic valve replacement, mitral valve annuloplasty, left atrial maze procedure, left ventricular aneurysmorrhaphy, atrial fibrillation and complete heart block status post pacemaker, and congestive heart failure.

Findings
Chest CT revealed a dilated esophagus, mucus plugging and near-complete obstruction of the left mainstem, left upper and lower lobe bronchi and near complete collapse of the left lower lobe and lingula. On admission bronchoscopy was performed to relieve the mucous plug. Further review of his chest CT revealed an enlarged pulmonary vein compressing his esophagus. The patient underwent upper endoscopy, which revealed an extrinsic moderate stenosis measuring 3cm (in length) by 1.2cm (inner diameter) in the lower third of the esophagus. This area could be traversed and no intrinsic stricture was found. His subtotal gastrectomy and remaining exam was normal. Given his age, invasive management strategies were deferred and he was discharged with dietary and lifestyle modifications.

Discussion
Dysphagia lusoria is a term used to describe dysphagia as a consequence of vascular compression of the esophagus. The majority of cases of dysphagia lusoria are attributed to an aberrant right subclavian artery; however, other vascular causes, as was the case here, have been reported. In elderly patients who present, there is likely concomitant age-related esophageal dysmotility, such as peristaltic failure, contributing to symptom onset. In this case, the complex cardiac history offers some clue as to causes of left atrial dilatation and pulmonary venous hypertension. Further diuresis would be important to reducing pulmonary venous congestion and hypertension, and thus reduce esophageal obstruction symptoms.

The initial diagnostic test is a barium swallow, which in a review by Levitt was abnormal in all examined cases of dysphagia lusoria. Manometry and endoscopy may be abnormal but are often non-diagnostic. CT or MR with vascular reconstruction are used to define the vascular lesion and plan for possible surgical intervention.
Figure A. Axial contrast enhanced CT images of the thorax. The upper esophagus is dilated (a; arrow) and contains some retained food material seen as filling defects within the oral contrast material (b; arrow). The esophagus shows narrowing at the level of the left inferior pulmonary vein with esophagus being "pinched off" between the pulmonary vein and the aorta. The left atrium is markedly dilated (LA; measured 73 mm). There is flow of contrast beyond the level of compression and the distal esophagus is normal in caliber (D; arrow). There is a mucus filled left lower lobe bronchus with calcified wall (c; red arrow) and associated collapse of left lower lobe (d; red arrow). Note is also made of a pacemaker device, bioprosthetic aortic valve replacement and mitral annuloplasty ring.

Figure B. Endoscopic images of the distal esophagus with area of extrinsic stenosis, without intrinsic stricture.

Figure C. Oblique long axis thick MPR (a) and volume rendered thin slab (b) images reconstructed along the esophagus demonstrate a dilated air filled proximal esophagus (E) with narrowing caused by the extrinsic compression form the inferior pulmonary vein (arrows). [T- Trachea].

Figure D. Volume rendered image in an oblique projection again demonstrates extrinsic compression and narrowing (arrow) of the esophagus (E) by the left inferior pulmonary vein (LIPV).

Mild to moderate symptoms are managed with lifestyle and dietary modification, such as avoiding exacerbating foods, eating slower, chewing well, taking smaller bites, sipping liquids. A small series by Janssen et al found that acid suppression with a proton pump inhibitor and promotility agents have been used with some success. Surgical treatment has been pursued and cited in the literature, though there is no consensus about the ideal approach.
References

