Office-based endoscopic diagnosis of esophageal diverticulum

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Abstract

Objectives: To assess if esophagopharyngeal reflux (EPR) on fiberoptic endoscopic evaluation of swallowing (FEES) is diagnostic of esophageal diverticulum, and to evaluate the role of in-office transnasal esophagoscopy (TNE) in the diagnosis of esophageal diverticulum.

Methods: Medical records of 271 consecutive patients undergoing FEES were reviewed. All patients with esophageal diverticulum were identified. A control cohort of patients with pooling of secretions or food residue in the piriform sinuses was also identified. Video recordings of FEES and TNE were reviewed for both cohorts.

Results: Eleven patients had esophageal diverticulum; nine were Zenker’s type, one was mid-esophageal, and one was lateral cervical. All patients with esophageal diverticulum demonstrated EPR on FEES, a characteristic finding of the food bolus initially disappearing into the esophageal inlet during the swallow then refluxing back into the hypopharynx after the swallow. Six patients underwent concurrent in-office TNE, which identified the diverticulum in all. Nine cases were confirmed radiographically, while two were diagnosed with FEES and TNE alone. Nine patients were treated surgically and EPR disappeared after successful surgical treatment in all nine. EPR occurred in one of the 37 control patients, this patient was found on TNE to have an esophageal perforation and exposed cervical spine fixation hardware with pooling of food in an extraluminal pouch.

Conclusion: EPR on FEES has a high sensitivity (100%) and specificity (97%) for esophageal diverticulum. TNE can confirm the diverticulum in-office for immediate surgical planning.

Esophageal diverticula

1. Zenker’s diverticulum
   - Most common type
   - Pulsion diverticulum through Killian’s triangle between cricopharyngeus muscle and inferior constrictor
2. Killian-Jamieson diverticulum
   - Lateral pulsion diverticulum herniating between the transverse and oblique portions of the cricopharyngeus muscle
3. Mid-esophageal diverticulum
   - Rare, traction diverticulum
   - Often caused by intrathoracic adhesions or neoplasms

All cause dysphagia, with undigested food regurgitation most prevalent in Zenker’s type.

Diagnosis has traditionally required a barium esophagram, although the diagnostic accuracy of barium radiology for diverticula has never been reported.

Transnasal esophagoscopy

Examination of the esophagus with a flexible transnasal fiberscope can visualize diverticula directly. This procedure can be done in the same office visit as FEES. TNE can localize the diverticulum and provides the same view as in endoscopic management. Unlike barium esophagram, TNE allows inspection of the mucosal surface.

Conclusions

1. Esophagopharyngeal reflux on FEES is a sensitive and specific sign for esophageal diverticulum.
2. FEES and TNE demonstrated all three types of esophageal diverticulum.
3. FEES and TNE can diagnose diverticulum in a single office visit, without radiologic studies.

References