

Carcinoma as a Complication of Esophageal Epiphrenic Diverticulum: a Case Report

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Abstract

Esophageal diverticula are rare and the association of cancer in a diverticulum is even more rare. Esophageal diverticula are classified by location- phrenoesophageal (Zenker's diverticulum-70%), thoracic and mediastinal (10%), and epiphrenic (20%).^[3] Incidence of cancer in a diverticulum is 0.3%–7%, 1.8%, and 0.6% for pharyngoesophageal, midesophageal, and epiphrenic diverticula, respectively. We report a case of epiphrenic esophageal diverticulum complicated by malignancy within the diverticulum.

Keywords: CECT, contrast enhanced computed tomography, EGD, esophagogastroduodenoscopy

Introduction

Esophageal diverticula are rare with a prevalence of 0.06% to 3.6% based on radiologic and endoscopic series.^[1,2] Esophageal diverticula are classified by location- phrenoesophageal (Zenker's diverticulum- 70%), thoracic and mediastinal (10%), and epiphrenic (20%).^[3] The incidence of cancer in a diverticulum is 0.3%–7%, 1.8%, and 0.6% for pharyngoesophageal, midesophageal, and epiphrenic diverticula, respectively.^[4] We report a case of epiphrenic esophageal diverticulum complicated by malignancy within the diverticulum.

Case Report

A 52-year-old adult male without any previous comorbidity, presented three years back with complaints of regurgitation of food, sour eructation and chest discomfort. He underwent an esophagogastroduodenoscopy (EGD), which revealed a large esophageal diverticulum at 35 cm from incisor. There was no suggestion of achalasia cardia or malignancy. He was advised surgery. He declined surgical intervention but received medical therapy. He again presented to us with complaints of difficulty swallowing food, anorexia and chest pain. Repeat EGD revealed presence of polypoidal mass in the esophageal diverticulum with luminal compromise (Figure 1). EGD scope negotiated across with difficulty with normal gastroesophageal junction, stomach and duodenum. Biopsies were taken

from the diverticular mass and sent for histopathological examination.

Contrast enhanced computed tomography of chest revealed mass in relation to lower esophagus, compressing esophageal lumen (Figure 2A, 2B).

Histopathological examination of the esophageal diverticular mass was suggestive of squamous cell carcinoma. The Patient was

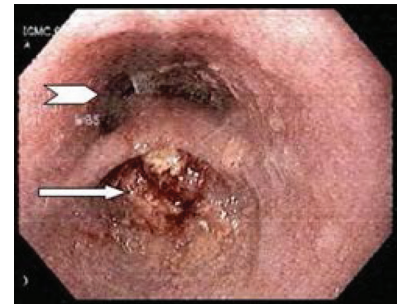


Figure 1: EGD image – Arrow showing epiphrenic esophageal diverticular growth, Arrowhead showing compressed esophageal lumen

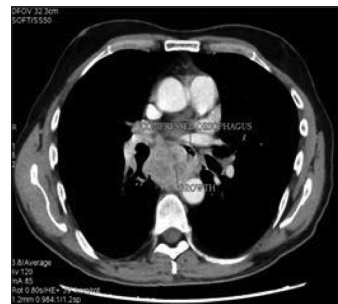


Figure 2A: Axial CT image showing mass in relation to esophagus compressing



Figure 2B: Coronal CT image showing mass in relation to lower esophagus compressing lumen

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started on radiotherapy and cancer chemotherapy in consultation with an oncologist; however, the patient expired after 3 months of diagnosis.

Discussion

Esophageal diverticula are rare with prevalence of 0.06% to 3.6%^[1,2] and the association of cancer in a diverticulum is even rarer. Esophageal diverticula are classified by location- phrenoesophageal (Zenker's diverticulum- 70%), thoracic and mediastinal (10%), and epiphrenic (20%).^[3] The incidence of cancer in a diverticulum is 0.3%–7%, 1.8%, and 0.6% for pharyngo-esophageal, midesophageal, and epiphrenic diverticula, respectively.^[4]

Epiphrenic diverticuli are rare acquired pulsion "pseudodiverticuli" usually located in the distal 10 cm of the esophagus. About 80% of these diverticula are associated with motility disorders, such as achalasia, diffuse esophageal spasm, hypertensive lower esophageal sphincter and nonspecific motility disorder.^[5]

It is estimated that 30%–40% of epiphrenic diverticula are asymptomatic. The most common symptoms include dysphagia, weight loss, and substernal pain. Symptoms are related to the complications arising from the diverticulum such as inflammation, perforation, hemorrhage, stricture formation and malignant changes within or around the diverticulum.^[6]

Carcinoma is one of the most severe complications of esophageal diverticula. Squamous cell carcinoma has been reported in epiphrenic diverticula.^[6] Symptoms may mimic those of the diverticulum or underlying motor disorders. Progressive dysphagia, unintentional weight loss, regurgitation of pieces of the tumor, odynophagia, melena, hematemesis, and hemoptysis are key symptoms.^[4] Risk factors for malignancy are old age, male gender, long-standing history, and larger diverticula.^[4]

Herbella *et al*^[4] collected 17 squamous cell carcinoma cases in association with epiphrenic diverticula from the literature. The mean age of the patients was 68 years and 83% of the patients were men. The mean time from the start of symptoms was 7 years. The mean size of the diverticula was 5 cm. Symptoms suggestive of possible malignancy includes melena, hematemesis and hemoptysis.

The carcinogenesis may be caused by chronic irritation by food, inflammation and repeated injury,^[7,8] a pathogenesis similar to that of achalasia.

These tumors are usually diagnosed in the advanced stage because of difficulties in pre-operative diagnosis. Barium swallow and EGD will help to establish the diagnosis. Contrast radiography is the prime diagnostic tool for evaluation of the diverticulum, associated esophageal abnormalities, and complications.

Progressive reduction in the size of the epiphrenic diverticulum and narrowing of esophageal lumen near the diverticulum seen in the esophagogram should be investigated to rule out malignant change.^[6] Barium esophagogram may be misleading as some lesions are not apparent and food residues may be a confounding factor.^[9] Esophagogastroduodenoscopy (EGD) must be a part of the pre-operative workup and should be performed to exclude malignancy.^[6]

Treatment of cancer in the diverticulum follows the same principles as the treatment for esophageal carcinoma.^[4] Different approaches have been described, from radiotherapy alone to resection plus chemoradiotherapy. Diagnosis during the operation may also change the surgical approach. As a practical guideline, if a carcinoma is discovered before operation or even during operation and if it is suspected to be a superficial cancer, the diverticulum must be resected and frozen sections obtained for confirmation. Diverticulectomy is the sole treatment in these cases since excellent results can be obtained with diverticulectomy only in superficial cancers.^[4] If an advanced carcinoma is suspected, an esophagectomy should be performed. Outcome is usually dismal because of a delayed diagnosis.

Conclusion

Esophageal diverticulum is rare and malignancy associated with esophageal diverticulum is even more rare. High index of suspicion should be kept in mind for early diagnosis and better outcome.

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