Epiphrenic oesophageal diverticulum is rare world-wide and account for less than 10% of all oesophageal diverticula. We present Mrs O.E. a 64-year old Nigerian of the Yoruba tribe who presented with early satiety and upper abdominal discomfort of five months duration. The early satiety was of insidious onset and had been progressive. This initially made her to reduce the size of her meal intake but eventually progressively led her to taking just a meal per day. This is in contrast with her premorbid intake of three meals per day. She has associated history of regurgitation worse in the recumbent position which she described as containing undigested food. She has no abdominal swelling, odynophagia or dysphagia. No history of haematemesis or melaena. She has weight loss and easy fatigability. The upper abdominal (epigastric) discomfort is characterized as a feeling of peppery, burning sensation which radiates to the back and had no association with meals or with time of the day. It has no relation to posture and said to be worse with consumption of peppery or spicy food substance. Minimally relieved with the use of antacids. No other significant contributory history. Review of systems was also not contributory. Clinical examination was not remarkable. A provisional diagnosis of a suspected Gastric Tumour was made likely a Gastric Lymphoma or Adenocarcinoma to rule out Gastrointestinal Stromal Tumour (GIST). Barium swallow revealed a Distal (Epiphrenic) oesophageal diverticulum. Findings at upper GI Endoscopy include: (1) Distal (Epiphrenic) oesophageal diverticulum (2) Reflux oesophagitis (3) Gastric Atrophy; probably age-related to rule out chronic Helicobacter pylori-infection. Histology revealed Reflux oesophagitis, Mildly active chronic corporeal gastritis with mild atrophy and Chronic non-specific antral gastritis. She was managed conservatively with long term proton pump inhibitor therapy, modification of dietary habits and liberal oral fluid intake with significant clinical improvement and resolution of her symptoms within eight weeks of treatment. She is presently on regular follow-up at our out-patient department. Distal (Epiphrenic) oesophageal diverticulum is rare in our environment. The diagnosis can only be made through radiographic or endoscopic studies. Patients may present with non-specific or dyspeptic symptoms similar to those of acid peptic disorders. In view of this, it is important to carefully evaluate patients with dyspepsia or non-specific upper gastrointestinal symptoms and investigate them in order to ascertain the cause. A delay in the diagnosis and treatment of epiphrenic oesophageal diverticulum may lead to complications which could have been prevented if diagnosed early.

**Keywords:** Epiphrenic, Oesophagus, Diverticulum.

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**Abstract**

Epiphrenic oesophageal diverticulum is rare world-wide and account for less than 10% of all oesophageal diverticula. We present Mrs O.E. a 64-year old Nigerian of the Yoruba tribe who presented with early satiety and upper abdominal discomfort of five months duration. The early satiety was of insidious onset and had been progressive. This initially made her to reduce the size of her meal intake but eventually progressively led her to taking just a meal per day. This is in contrast with her premorbid intake of three meals per day. She has associated history of regurgitation worse in the recumbent position which she described as containing undigested food. She has no abdominal swelling, odynophagia or dysphagia. No history of haematemesis or melaena. She has weight loss and easy fatigability. The upper abdominal (epigastric) discomfort is characterized as a feeling of peppery, burning sensation which radiates to the back and had no association with meals or with time of the day. It has no relation to posture and said to be worse with consumption of peppery or spicy food substance. Minimally relieved with the use of antacids. No other significant contributory history. Review of systems was also not contributory. Clinical examination was not remarkable. A provisional diagnosis of a suspected Gastric Tumour was made likely a Gastric Lymphoma or Adenocarcinoma to rule out Gastrointestinal Stromal Tumour (GIST). Barium swallow revealed a Distal (Epiphrenic) oesophageal diverticulum. Findings at upper GI Endoscopy include: (1) Distal (Epiphrenic) oesophageal diverticulum (2) Reflux oesophagitis (3) Gastric Atrophy; probably age-related to rule out chronic Helicobacter pylori-infection. Histology revealed Reflux oesophagitis, Mildly active chronic corporeal gastritis with mild atrophy and Chronic non-specific antral gastritis. She was managed conservatively with long term proton pump inhibitor therapy, modification of dietary habits and liberal oral fluid intake with significant clinical improvement and resolution of her symptoms within eight weeks of treatment. She is presently on regular follow-up at our out-patient department. Distal (Epiphrenic) oesophageal diverticulum is rare in our environment. The diagnosis can only be made through radiographic or endoscopic studies. Patients may present with non-specific or dyspeptic symptoms similar to those of acid peptic disorders. In view of this, it is important to carefully evaluate patients with dyspepsia or non-specific upper gastrointestinal symptoms and investigate them in order to ascertain the cause. A delay in the diagnosis and treatment of epiphrenic oesophageal diverticulum may lead to complications which could have been prevented if diagnosed early.
Introduction

Oesophageal Diverticula occur in 3 classic locations within the esophagus: Proximal (Zenker’s or pharyngoesophageal), Middle oesophagus and Distal (epiphrenic) oesophagus.\textsuperscript{1} The most common cause of epiphrenic diverticulum is a primary oesophageal motility disorder such as achalasia, nutcracker oesophagus and diffuse oesophageal spasm.\textsuperscript{2,3} It is located in the distal 10 cm of the esophagus, mostly caused by distal narrowing of the esophagus and a subsequent rise in the intraluminal pressure, resulting in herniation of the mucosa and submucosa through the esophageal musculature.\textsuperscript{2,3,4}

Epiphrenic oesophageal diverticulum is rare\textsuperscript{5,6} world-wide and account for less than 10\% of all oesophageal diverticula.\textsuperscript{7} The prevalence of Epiphrenic oesophageal diverticulum is 0.06-4\% based on radiologic and endoscopic findings.\textsuperscript{5} The actual incidence of Epiphrenic oesophageal diverticulum is not known but, the estimated incidence is about 1:500,000/year.\textsuperscript{8} Most patients with a mild diverticulum usually present with no major symptom while individuals with a large diverticulum do present with symptoms but the symptoms are usually of insidious onset and non-specific which may mimic that of other conditions thus making the diagnosis of Epiphrenic oesophageal diverticulum difficult.\textsuperscript{5,9} Such symptoms include heartburn, dysphagia, regurgitation, chest pain, epigastric pain and halitosis.\textsuperscript{5,9,10} We report a case of symptomatic Epiphrenic oesophageal diverticulum who was managed conservatively with significant resolution of symptoms.

Case Presentation

We present Mrs O.E. a 64-year old Nigerian of the Yoruba tribe who presented with early satiety and upper abdominal discomfort of five months duration prior to presentation at our Gastroenterology clinic. She was apparently well until five months prior to presentation when she developed early satiety which had since been progressive. This was said to have developed insidiously and described as sense of early fullness, which initially made her to reduce the size of her meal intake but eventually progressively led her to taking just a meal per day. This is in contrast with her premorbid intake of three meals per day. She has associated history of regurgitation worse in the recumbent position which she described as containing undigested food. She has no abdominal swelling, odynophagia or dysphagia. No history of haematemesis or melaena. She has weight loss and easy fatigability. Subsequently, she developed upper abdominal discomfort of insidious onset which was located at the epigastric region. The discomfort is characterized as a feeling of peppery, burning sensation which radiates to the back and had no association with meals or with time of the day; not worse in the morning or at night. It has no relation to posture and said to be worse with consumption of peppery or spicy food substance. Minimally relieved with the use of antacids. She has not been previously diagnosed with peptic ulcer disease. No past history of recurrent heartburns, acid brash or water brash. She has no history of indiscriminate NSAID use, chronic alcohol intake, prolonged fasting, hormone replacement therapy, anticoagulant or antiplatelet use. No use of steroids, caffeinated drinks or cigarette smoking. No history of recreational drug use. She has no history of previous gastric or abdominal surgery, exposure to radiation or contact with chemicals or dyes. No history of chronic consumption of smoked fish or meat. No family history of gastric cancer and no family history of similar symptoms. Review of systems was not contributory. She is not a known patient with systemic hypertension or diabetes mellitus. She is married in a monogamous setting with four children. She has no known allergy. Clinical examination revealed a middle-aged woman, conscious, not in any obvious distress, not pale, not icteric, not cyanosed, not febrile, not dehydrated, no significant peripheral lymph node enlargement, no pedal oedema. The

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Figure 1: A Barium contrast radiographic image of the entire length of the oesophagus showing a diverticulum at the distal aspect of the oesophagus.

Figure 2: A Barium contrast radiographic image of the lower aspect of the oesophagus showing a diverticulum at the distal aspect of the oesophagus.
Figure 3: An Endoscopic image of the oesophagus showing a diverticulum at the distal end of it. The epithelial lining of the stomach is seen extending into the diverticulum. There is some inflammation of the distal oesophagus suggestive of reflux oesophagitis.

Figure 4: Another Endoscopic image of the oesophagus showing a diverticulum at the distal end of it.
Figure 5: An Endoscopic image of the proximal oesophagus. No other diverticulum was found in the other parts of the oesophagus.

Figure 6: An Endoscopic image of the gastric fundus. Hiatus hernia was not detected.
abdomen was full, moved with respiration, no areas of tenderness, liver span was 10cm, the spleen and kidneys were not palpably enlarged. No ascites and bowel sound was normoactive. Digital rectal examination was essentially normal. The examination of the other systems was essentially normal. A provisional diagnosis of a suspected Gastric Tumour was made likely a Gastric Lymphoma or Adenocarcinoma to rule out Gastrointestinal Stromal Tumour(GIST).

Barium Swallow:
Normal swallow reflex noted. The entire oesophagus was demonstrated up to the oesophago-gastric junction. There is a diverticulum seen in the lower end of the oesophagus with no interference at the gastro-oesophageal sphincter which is intact. The outlined stomach appears within normal limits. Conclusion of barium swallow: Distal oesophageal diverticulum ? cause

Upper GI endoscopy:
Oesophagus: There is a diverticulum at the distal end of the oesophagus. The gastric mucosa epithelium is seen extending into the diverticulum. There is some inflammation of the distal oesophagus in keeping with reflux oesophagitis. There is no similar diverticulum in the mid- or upper oesophagus. No areas of erosion or ulceration seen. Diverticulum is empty. Multiple biopsy samples were taken from the diverticulum and the gastrooesophageal junction.

OGJ: at 40cm from the incisor tooth
Hiatal hernia: Absent
Stomach: The gastric mucosa appears atrophic (maybe age-related). The gastric rugae is still preserved. Otherwise the Gastric antrum, fundus and corpus appear grossly normal. No mass seen. No areas of erosions, ulcerations, polyps or diverticula seen. No evidence of food debris or any significant fluid collection seen. The stomach distensibility is adequate. The Pyloric ring is normal.
Duodenum: Bulb and Post-bulbar segments are normal.

Endoscopy Diagnosis: (1) Distal (Epiphrenic) oesophageal diverticulum (2) Reflux oesophagitis (3) Gastric Atrophy; probably age-related to rule out chronic Helicobacter pylori-infection.

Histology:

Macroscopy
1. Oesophageal Pouch – Specimen consists of 3 tiny pieces of greyish-white tissue, altogether measuring 0.2cm in length.
2. Gastro-oesophageal Junction – Specimen consists of 3 tiny pieces of greyish-white tissue, altogether measuring 0.2cm in length.
3. Gastric Corpus – Specimen consists of 3 tiny pieces of greyish-white tissue, altogether measuring 0.4cm in length.
4. Gastric Antrum – Specimen consists of 3 tiny pieces of greyish-white tissue, altogether measuring 0.4cm in length.

Microscopy
Oesophageal Pouch and GEJ
Histologic sections of the oesophageal pouch biopsy and gastro-oesophageal junction show acanthotic stratified squamous epithelial lining with no atypia. There is basal cell hyperplasia and elongated lamina propria. Infiltrates of neutrophils and eosinophils are seen in the submucosa. Mucosa of the gastro-oesophageal junction is also partly lined by columnar epithelial cells with no atypia. Also seen are infiltrates of plasma cells and lymphocytes.
Diagnosis: Reflux oesophagitis

Gastric Corpus
Histologic sections of corpus biopsy show intact mucosa, epithelial lining and severe infiltrates of plasma cells and lymphocytes in the mucosa with mild neutrophilic inflammatory infiltrates seen. Mild glandular atrophy is seen. No metaplasia, no dysplasia and no HLOs seen.
Diagnosis: Mildly active chronic gastritis with mild atrophy

Gastric Antrum
Histologic sections of antral biopsy show intact mucosa epithelial lining with mild lymphocytic inflammatory infiltrates in the submucosa and mucosa. No activity, no atrophy, no metaplasia and no dysplasia seen. No HLOs present.

Diagnosis: Chronic non-specific gastritis

Conservative therapy was commenced and this comprised of; long term proton pump inhibitor therapy (Cap Rabeprazole 20mg twice daily), modification of dietary habits and liberal oral fluid intake. There was significant clinical improvement with resolution of all her symptoms after eight weeks of conservative treatment. She was nevertheless counselled that she may need a referral to a Cardithoracic Surgeon for surgical care if there is a recurrence, persistence or worsening of symptoms. She is presently on regular follow-up at our out-patient department.

Conclusion

Distal (Epiphrenic) oesophageal diverticulum is rare in our environment. The diagnosis can only be made through radiographic or endoscopic studies. Patients may present with non-specific or dyspeptic symptoms similar to those of acid peptic disorders. A delay in the diagnosis and treatment of epiphrenic oesophageal diverticulum can lead to severe complications such as aspiration pneumonia, stasis oesophagitis/diverticulitis, food impaction and bleeding. Patients with undiagnosed epiphrenic oesophageal diverticulum may also be at increased risk for oesophageal cancer, which occurs at a frequency of 0.3% to 3% for patients with this condition. In cases of epiphrenic oesophageal diverticula carcinoma, the cancer is often advanced at the time of diagnosis. In view of this, it is important to carefully evaluate patients with dyspepsia or non-specific upper gastrointestinal symptoms and investigate them in order to ascertain the cause. Once a patient is diagnosed with Epiphrenic oesophageal diverticulum there is a need to manage them appropriately which may include an initial conservative treatment and if indicated, laparoscopic or surgical therapy.

Oguntoyé Oluwatosin Oluwagbenga et al., OJGH, 2020 3:34

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References

