

and complete recovery has been reported even without any treatment [3]. We managed the case with short course of steroids without any side effects, and the child started improving from day four and the recovery was complete by day eleven. Several reports suggest initiation of recovery by tenth day and reversal of pharyngeal weakness by 4-7 weeks without the use of steroids [3,5]. Nonetheless, further reports focusing on the therapeutic aspect are desired, before a recommendation is made.

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Esophageal Diverticulum Secondary to Impacted Foreign Body

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We report a two year old child who developed a large esophageal diverticulum over a period of ten months following ingestion of a multispiked leaf of *Quercus semicarpipholia*. Though the endoscopic removal of foreign body was successful, it did not relieve the symptoms and patient required surgical resection of the diverticulum. Patient is asymptomatic after 4 months of follow up.

Key words: Child, Diverticulum, Esophagus, Foreign body.

Foreign body ingestion is frequent in children, especially between six months to three years of age owing to their inherently inquisitive nature [1]. Though majority of ingested foreign bodies traverse the gastrointestinal tract without any adverse effects, occasionally they can get impacted resulting in various complications [2]. A two years old child is reported with an impacted woody tree leaf in esophagus, producing a valve effect causing partial obstruction and development of a large, secondary esophageal

diverticulum over a ten months period.

CASE REPORT

A two year old male child was brought with history of persistent vomiting following any solid food ingestion and progressive weight loss for the last ten months. The child had a normal growth and development till fourteen months of age when he had sudden choking with cough while playing. The initial two vomitings contained small amounts of fresh blood but later it contained only the ingested

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solid food. The vomitings persisted despite several medications and gradually the mother noticed that the child tolerated small frequent fluid feeds which comprised mainly of water and milk.

Examination revealed an afebrile, pale and malnourished child (PEM grade II). Systemic examination and the biochemical laboratory work up was within normal limits. Chest radiographs did not reveal any abnormality. An upper gastrointestinal obstruction was suspected and the child was subjected to endoscopy.

A vegetative foreign body in the form of two pieces of semilunar thick tree leaves was observed blocking the lumen of esophagus with suspicion of diverticula proximal to it. The foreign body removed endoscopically was a single leaf $3\text{cm} \times 2\text{cm}$ with thorny peripheral edges (**Fig 1**), which had caused impaction. The leaf was torn in the middle with two pieces acting as valvular flaps and allowing fluids to trickle down. It was identified as leaf of *Quercus semicarpipholia*, a species commonly found in hilly areas of J & K state. However, endoscopic removal did not relieve the symptoms and a barium esophagogram (**Fig 2**) done revealed a large diverticulum at the midesophagus level with dilated proximal portion of esophagus. Computerised tomography chest confirmed these findings. Patient had an episode of chest infection which responded to antibiotics. He was then transferred to Cardiothoracic Unit for surgery. Intraoperatively there was a big diverticulum in



FIG. 1 *Quercus* leaf with spiny edges which was removed by endoscopy.

relation to the mid esophagus which was excised and end to end anastomosis was done. Patient is symptom free after four months follow up.

DISCUSSION

Early recognition and treatment of the esophageal foreign bodies is imperative because complications can be serious and life threatening viz perforation, extraluminal migration, mediastinitis, hemorrhage, aorto-esophageal fistula, stricture and esophageal diverticulum [3]. Most of the esophageal diverticula occur in middle aged adults and elderly people, however rarely they may occur in children [4]. Macpherson, *et al.* [3] in a study of esophageal foreign bodies in 118 children reported diverticulum in one case. Patients may remain asymptomatic or may present with dysphagia, regurgitation, halitosis or aspiration pneumonia. Retention of undigested food in large diverticula results in regurgitation, nocturnal cough and aspiration pneumonia [4].

Diagnostic modalities include barium swallow, upper GI endoscopy, and computed tomography. Barium radiography is generally the procedure of choice. In addition to being excellent at defining the structural appearance of diverticula, barium swallow may also provide clues to underlying motility disorders that may be involved in diverticular formation. On CT scan, large diverticula of

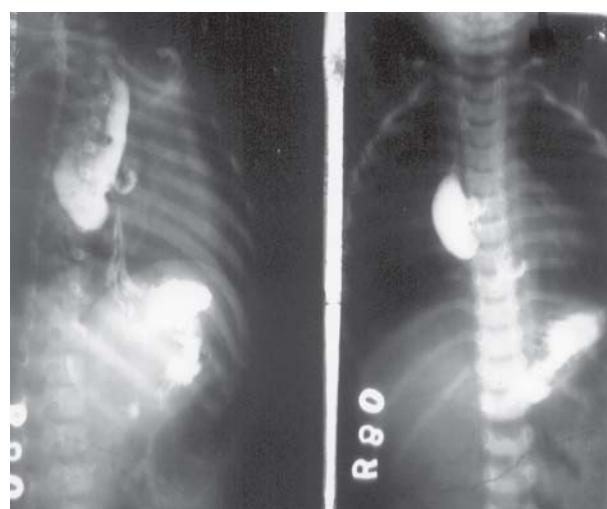


FIG 2 Barium swallow showing the esophageal diverticulum as a large outpouching from the right lateral wall of the esophagus.

esophagus may manifest as air and/or fluid filled structures communicating with the esophagus [5]. Endoscopy can be performed to rule out underlying structural lesions.

Asymptomatic and minimally symptomatic esophageal body diverticula do not require treatment. Surgical management described for symptomatic mid thoracic or epiphrenic diverticula are extended myotomy and diverticulectomy with an anti reflux procedure. An abdominal laparoscopic approach may be feasible for some patients with epiphrenic diverticula [6]. Endoscopic treatment of giant mid-esophageal diverticula has been occasionally reported [7].

There are a very few case reports of esophageal diverticula in children following impacted foreign body. Akhter, *et al.* [8] reported a two and half year old boy who developed a large esophageal diverticulum following an impacted plastic button which remained undiagnosed for 18 months. Herman, *et al.* [9] reported two pediatric patients of 7 and 2 years, who presented with progressive dysphagia of 4 and 6 months period, respectively due to esophageal stictures and secondary diverticulum due to unrecognised impacted foreign bodies [9]. The present case had developed a large mid esophageal pulsion diverticulum as a result of impacted tree leaf for a prolonged period of ten months. The leaf was woody and had multiple small spikes on the margins which lead to circumferential impaction. The breech in the middle allowed the

patient to sustain life on fluids alone for ten months.

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