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Prolonged Impacted Denture in the Esophagus Mimicking Gastroesophageal Reflux Disease: Case Report

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Authors' contributions

This work was carried out in collaboration between both authors. Author ACJ designed the study, managed the literature search and wrote the first draft of the manuscript. Author MLA participated in the design of the study and performed a critically review of the manuscript. Both authors read and approved the final manuscript.

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Case Study

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ABSTRACT

Accidental ingestion of denture resulting in esophageal impaction is fairly reported in the literature. It is, however, uncommon to find such impaction lasting more than a few days without the development of serious complications. We present a 38-year-old man with denture impaction in the esophagus for 20 years who presented with features of gastroesophageal reflux disease. This case brings to the fore the need for a thorough evaluation of all patients who incidentally ingest denture irrespective of the severity of the initial symptoms.

Keywords: Esophageal denture impaction; esophageal foreign body impaction; gastroesophageal reflux disease; Nigeria.

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1. INTRODUCTION

Impaction of foreign body in the esophagus is a common occurrence worldwide. The common types of foreign objects ingested by children and adults vary significantly. While coins, bottle-tops, button-batteries and safety pins are the commonly reported esophageal foreign bodies in children; bone, dentures, solid meat and metallic wires are commoner in adults [1,2].

The clinical manifestations of esophageal foreign body impaction depend on the type of foreign body ingested and the location of impaction (cervical, thoracic or abdominal portion of the esophagus). The common symptoms of esophageal impacted foreign body of less than 24 hours tend to be mainly gastrointestinal and include dysphagia, throat pain, odynophagia, drooling and vomiting [3]. Respiratory problems such as cough, chest pain, stridor, wheeze, respiratory tract infection, hemoptysis etc. tend to appear weeks or months after ingestion [3].

Generally, an esophageal impacted foreign body induces acute symptoms that necessitate immediate search for medical attention, diagnostic evaluation and removal. In rare instances, however, the impaction may not produce initial alarm symptoms that warrant urgent medical intervention thereby resulting in prolonged impaction. We present a 38-year-old man with esophageal impacted denture that lasted 20 years before presentation. To the best of our knowledge, this seems to be the longest reported duration of impacted denture in the esophagus before a definitive diagnosis was made.

2. CASE REPORT

A 38-year-old man presented to our clinic with a history of recurrent retrosternal pain of 20 years. The latest episode of the pain started 3 months before presentation. The pain was initially mild and dull-aching but later became moderately intense and burning in nature. It scored 8 on a visual analog scale, 0 and 10 been the lowest and highest scores respectively. The pain woke him up at night and interfered with his daily activities occasionally. It was relieved by intake of nonsteroidal anti-inflammatory drugs (NSAIDs), antacids, and proton pump inhibitor. There was associated history of regurgitation and occasional epigastric pain. He had no dysphagia, odynophagia or vomiting. He had an episode of melena 17 years earlier. He admitted to frequent use of NSAIDs at that time. There was no history of hematemesis, recurrent vomiting or weight loss. He neither smoked cigarette nor consumed alcohol.

Physical examination was unremarkable apart from mild epigastric tenderness.

We made a provisional diagnosis of gastro-esophageal reflux disease (GERD) at this time.

At esophagogastroduodenoscopy (EGD), we found a dark hard object that was partly covered by a cheesy material attached to the esophageal mucosal at a distance of 30cm from the incisors. The surrounding mucosal area appeared thickened. The object occluded the esophageal lumen partially but the endoscope passed into the stomach without difficulty (Fig. 1). The oropharynx, stomach and the first and second part of the duodenum were normal in appearance.

Further questioning after the procedure revealed that the patient sustained a dental injury at age 11, 27 years before presentation, after which he developed recurrent dental infection. A dental hygienist removed three of his teeth because of the recurrent infection at age 18, 20 years before presentation, and gave him a denture to wear. He swallowed the denture incidentally shortly before the retrosternal pain started. Thereafter, he consulted with a physician who told him not to worry. No investigation was done to exclude esophageal impaction.

He had a barium esophagogram which showed a filling defect and marginal irregularity in the lower thoracic esophagus (Fig. 2).

A definitive diagnosis of prolonged impacted denture in the esophagus was made.

A joint review by an otorhinolaryngologist and a cardiothoracic surgeon indicated that he needed thoracotomy with esophagotomy and/or esophagectomy to remove the foreign body. He has not had the surgery because of financial constraint 17 months after diagnosis. He has since been taking PPI and antacids to relief the symptoms.

Fig. 1. Impacted denture in the esophagus

Fig. 2. Barium esophagogram showing filling defect and marginal irregularity in the lower thoracic esophagus

3. DISCUSSION

Previous reports have shown that esophageal denture impaction is not uncommon in Nigeria [4–7]. The reported prevalence of denture impaction among patients with impacted pharyngoesophageal foreign bodies in Nigeria varies widely depending on the time and location of the study [4,5,7]. Onyekwere and colleagues reported a prevalence of 38.6% among adults with esophageal impacted foreign bodies in Ibadan, southwest Nigeria [5]. A prevalence of 18.4% was reported by Adedeji and colleagues among all patients with various pharyngoesophageal foreign body impaction in Osogbo, southwest Nigeria [7].

The male gender appears to be generally more prone to denture ingestion and impaction than the female gender [5–8]. Other identified predisposing factors include high-risk behavior like sleeping or masticating with the denture; inappropriate fabrication of denture; prolonged usage and failure to present for routine medical checkup [4,5].

Majority of ingested foreign bodies pass through the gut without complication but large sharp objects like denture and bones could easily get impacted [9]. Ingested dentures often get impacted in the esophagus and are difficult to retrieve because of their large size, rigidity and pointed edges. Though foreign body impaction could occur at any of the three anatomic areas of constriction in the esophagus, the commonest location of denture impaction is in the upper esophagus just below the cricopharyngeal junction [5–7].

Sacko reported three cases of prolonged coins impaction in the cervical esophagus of children that lasted for 8, 10 and 14 months respectively

in Mali [10]. Cases of prolonged denture impaction of the esophagus in adults with mild or no initial symptoms have been reported in Singapore, Iran, and India lasting 6 months, 9 months, and 3 years respectively before diagnosis [11,12,13]. We observed that none of these cited cases mimicked GERD.

Plain radiographs of the neck and chest x-rays are often used as the initial diagnostic method to localize esophageal impacted denture, like other foreign bodies. However, localization of acrylic dentures could be challenging because they are made of a radiolucent material (polymethylmethacrylate) which may be difficult to detect with the standard plain radiograph. Radiologic features that may suggest denture impaction include air entrapment and increased prevertebral soft tissue shadow [5,7]. Additional investigative procedures that could aid the localization of impacted denture before removal include barium swallow and computed tomographic scan [5,7,9]. In the event that the denture could not be localized despite the aforementioned procedures and the patient remains symptomatic, a flexible esophagoscpic examination may be done to exclude esophageal impaction.

Usually, the longer the denture stays in the esophagus, the more the likelihood of complications that could increase morbidity and mortality [7,14]. Such complications include: peri-esophagitis, necrosis and perforation of the esophageal wall, neck abscess, fistula formation, vascular erosion with excessive hemorrhage and extraluminal migration with subsequent diverticulum formation etc [5–7,14,15]. The possibility of esophageal impaction should always be considered and promptly investigated in all cases of incidental or deliberate ingestion of dentures. There is no room for conservative management. Removal by rigid esophagoscope under general anesthesia is the commonly used method. Adequate precautionary measures should be taken during the procedure to prevent catastrophic esophageal perforation [5,7]. Shear forceps could be used to fragment large dentures before extraction to reduce the chances of iatrogenic complications [5–7]. The use of overtube may be necessary to prevent esophageal tear from the sharp edges of the denture during retrieval. The procedure should not be done hastily or overenthusiastically. Flexible upper gastrointestinal endoscopy can also be used to remove the impacted foreign body and it is as effective as rigid esophagoscope [16-17]. Difficult cases and those with complication could be removed via transcervical or transthoracic esophagotomy or esophagectomy as may be required [5,7,18].

4. CONCLUSION

The clinical presentation of esophageal denture impaction is usually dramatic and the diagnosis often straight-forward. Nevertheless, it may occasionally pose a diagnostic challenge in those with mild symptoms. Our patient had to go through the ordeal of recurrent chest pain and regurgitation and prolonged use of drugs because he was not properly evaluated at the beginning. At such instance when there is a history of foreign body ingestion but esophageal impaction could not be easily dispelled, a high index of suspicion and meticulous evaluation are required by the clinician in order to prevent the development of major complications.

CONSENT

The authors declare that written informed consent was obtained from the patient for publication of this case report and accompanying images.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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