

**Case study****Prolonged Esophageal Denture Impaction  
Presenting with Features of Gastroesophageal  
Reflux Disease: Case Report**

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**ABSTRACT**

Incidental 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 esophageal for 20 years who presented with features of gastroesophageal reflux disease. This case brings to 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*

**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.

41 **2. CASE REPORT**

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43 A 38-year-old man presented to our clinic with a history of recurrent retrosternal pain of 20  
44 years. The latest episode of the pain started 3 months before presentation. The pain was  
45 initially mild and dull-aching but later became moderately intense and burning in nature. It  
46 scored 8 on a visual analog scale, 0 and 10 been the lowest and highest scores respectively.  
47 The pain woke him up at night and disrupted his daily activities occasionally. It was relieved  
48 by intake of nonsteroidal anti-inflammatory drugs (NSAIDs), antacids, and proton pump  
49 inhibitors. There was associated history of regurgitation and occasional epigastric pain. No  
50 dysphagia, odynophagia or vomiting.

51 He had an episode of melena stool 17 years earlier. He admitted to frequent use of NSAIDs  
52 at that time. No history of hematemesis, recurrent vomiting or weight loss. He neither  
53 smoked cigarette nor consumed alcohol.

54 Physical examination was unremarkable apart from mild epigastric tenderness.

55 We made a provisional diagnosis of gastroesophageal reflux disease (GERD) at this time.

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

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Figure 1: Impacted denture in the esophagus

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

73 A definitive diagnosis of prolonged esophageal denture impaction was made.

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

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### 3.DISCUSSION

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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 impaction of coins in the cervical esophagus of children (8, 10 and 14 months respectively) in Mali [10]. Cases of prolonged esophageal dentures impaction in adults with mild or no initial symptoms have been reported in Singapore (at 22cm from the incisors lasting for 6 months) [11], Iran (at 25cm from the incisor lasting for 9 months) [12] and India (in the lower cervical esophagus lasting for 3 years) [13]. We observed that none of these cited cases presented with GERD symptoms. This is probably because the impacted foreign bodies were not as distally located as compared to our patient who had the denture impacted at 30 cm from the incisors [10–13].

Plain radiograph (neck and chest x-rays) is 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 esophagoscopy 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. Difficult cases

130 and those with complication could be removed via transcervical or transthoracic  
131 esophagotomy or esophagectomy as may be required [5,7,16].

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#### 4. CONCLUSION

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

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#### CONSENT

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147 The authors declare that 'written informed consent was obtained from the patient for  
148 publication of this case report and accompanying image. A copy of the written consent is  
149 available for review by the Editorial office/Chief Editor/Editorial Board members of this  
150 journal.

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#### ETHICAL APPROVAL

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Not applicable

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