

An Impacted Denture in the Hypopharynx-A quick intervention reduces morbidity

ABSTRACT

A 32yrs old male police officer was brought to Accident and Emergencies on account of ingestion of a denture,while trying to to drink his medications,about 4hours prior to presentation in our facilities.He had immediate painful distress, choking sensation cough and with mild difficulty in breathing.Plain radiograph showed opacification with increased prevertebral soft tissue shadow in the region of C4-C5 of the hyphopharynx.He had emergency examination under general anaesthesia and the foreign body was extracted from the throat. Immediate post-operative condition was satisfactory.This case is reported to show the importance of the need that artificial dentures should have a good anchor when been designed as well as to exercise caution when taking medications by people with artificial denture.Also earlier presentation and quick intervention as done in this case prevent serious morbidity that can be associated with such condition.

Keywords:Denture,Hypopharynx,Foreign body impaction

Introduction

Foreign body ingestion and aspiration is among the most common causes of emergency department visit associated with high morbidity and mortality¹. Coins, meat bone, marbles, safety pins, button,batteries and screws are among the most common ingested and aspirated foreign bodies in pediatric age group². In adults, coins and denture has been reported to be the most common aspirated foreign bodies. Sharp foreign body aspirations and ingestions are frequently associated with serious complications. If they are not removed at the earliest, they

25 can cause esophageal erosion, perforation, abscess or mediastinitis³. Early removal of this
26 foreign body must be considered to reduce the risk of complication of dislodgement and
27 subsequent ingestion or aspiration. An accidental ingestion of an appliance can create a
28 medical or a surgical emergency that can lead to serious complications, including death from
29 aspiration of the foreign body⁴. Because of their sizes, rigidity and pointed edges; dentures
30 get frequently impacted in the oesophagus and are difficult to retrieve endoscopically⁵.
31 The tooth contributes to the esthetic appearance of the face. Biographers and playwrights,
32 among others, in portraying the facial appearance of their characters, have employed this
33 feature. While in the past early European visitors to Nigeria admired her natives "perfect row
34 of whiteteeth," the converse is true now as a result of tooth loss due to caries and periodontal
35 disease. This situation has led to an increase in the number of people wearing dentures in our
36 environment and, thus, a proportionate increase in the incidence of esophageal impacted
37 dentures⁶.

38 Case Report

39 A 32yrs old male who was brought to our A & E on account of ingestion of a denture about
40 4hours prior to presentation when he accidentally swallowed an upper artificial denture while
41 taking his medications. He had immediate painful distress, choking sensation, cough and mild
42 difficulty in breathing. No nasal or otological symptoms. No previous history of similar
43 ingestion. He claimed to be conversant with routine daily removal and cleaning of the denture
44 without any issue. No history of hypertension, diabetes, Peptic ulcer, asthma, and surgery in
45 the past. Examination revealed a young man fully conscious and well oriented but in painful
46 distress. He was not pale, anicteric, afebrile (36.8), and not dehydrated. PR: 74bpm, BP
47 150/90mmHg, SPO2:97% on room air and RR: 28cpm. Ear & Nose examination revealed no
48 abnormality, Oral cavity & oropharynx revealed good oral hygiene with absence of 2 upper

49 incisors and left canine, no hyperemia or swelling. No neck swelling and his chest was
50 clinically clear.

51 Plain radiograph of soft tissue neck done revealed opacification with increased pre-vertebral
52 soft tissue shadow in the region of C4-C5 of the hyphopharynx (Fig 1).He had emergency
53 examination under general anaesthesia and endoscopy. The denture (Fig 2) was found
54 impacted in hypopharynx covered by caked blood. It was extracted with a grasping forceps
55 with little resistance. The denture was 5x10 cm in the longest dimensions

56 The immediate post operative condition was satisfactory. Patient tolerated graded oral
57 feeding after 24 hours post operative time and was subsequently discharged 48 hours post
58 operative time.

59 Discussion

60 Impaction of dentures in the esophagus is not rare in Nigeria. Most patients are aware of the
61 diagnosis before seeking treatment. Exceptions to this are children, the mentally handicapped,
62 and those under the influence of alcohol. In addition, acrylic dentures are associated with
63 reduced sensitivity of the oral cavity because of the insulating nature of the resins
64 used in their fabrication⁶.Though coins are the commonest foreign bodies which are seen in
65 the oesophagus in children, dentures are common in aged people due to the decreased
66 sensation of the oral cavity in denture wearers and the poor motor control of the
67 laryngopharynx⁷.

68 Swallowing and aspiration of dental foreign objects is often reported in the literature.

69 Swallowing

70 is more common than aspiration and usually seen in the elderly. As predicted by Okeowo and
71 Okafor and noted by Nwafo et al, artificial denture use has increased among Nigerians. In
72 previous studies from Lagos and Enugu, impacted dentures among Nigerians
73 constituted 4.9% and 2.2%, respectively, of foreign bodies in the pharynx and esophagus⁷.
74 A radiological imaging can determine the exact site of the radio-opaque impacted foreign
75 body. Dentures, however, are frequently made of acrylic resin, which is a radiolucent
76 material and thus, they are difficult to assess on plain X-Rays, though the radio-opaque wire
77 hooks of the dentures can sometimes be seen, if they are present⁴. It is difficult to localize
78 the site of impacted denture by imaging if there is no wire in it unless there is complications
79 such as emphysema, mediastinitis, increased prevertebral shadow and loss of cervical
80 lordosis. Their radiolucency makes radiological localization almost impossible, and because
81 of their rigidity, large size, irregular and unyielding edges, impacted dentures are apt to
82 produce lacerations during endoscopic removal from gullets rendered friable by impaction
83 ⁸. Most of the swallowed foreign bodies are impacted at the cervical and the upper oesophagus
84 . In our index case it was embedded in the hypopharynx thereby causing mild respiratory
85 difficulty. Moreover, there is a high risk of aspiration of the blood emanating from injury to the
86 hypopharyngeal structures by the sharp edges of the denture. This made urgent intervention
87 necessary.

88 Few reports have described the usefulness of an endoscopic removal, even for sharp or
89 penetrating foreign bodies⁹. However, the sharp hooks of the dentures are likely to damage
90 the oesophageal or the pharyngeal wall. Consequently, it is difficult to remove the dentures
91 endoscopically. Many articles have supported this primarily surgical approach over an
92 endoscopic removal for sharp dentures..

93 Endoscopic extraction of dentures carries a high risk of perforation¹⁰. Factors responsible for
94 this

95 include the size, rigidity, sharp edges of the dentures, and attempting extraction in less-than-
96 ideal

97 situations. In addition to these, the degree of periesophagitis at the site of impaction may
98 increase the risk of perforation. Endoscopy was done in this case as the radiograph had
99 already given a guide as to where the denture was impacted and such location may not carry
100 much morbidity with quick intervention.

101 Conclusion

102 Impacted denture extraction via rigid endoscopy carries a high risk of perforation, though it
103 can be undertaken under direct vision and in an ideal situation with judicious use of the
104 Shears forceps. There is no room for expectant or conservative management in cases of
105 impacted dentures, as the risk of complications increases the longer it takes before appropriate
106 surgical intervention. It then becomes imperative for the denture to be removed under direct
107 vision as soon as a diagnosis is made.

108 **Consent Disclaimer:**

109 As per international standard or university standard participant consent has been collected
110 and preserved by the authors.

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Figure legends

Fig 1: Lateral view of plain radiograph of soft tissue neck showing the denture (indicated with green pointer) in the region of C4-C5 of the hyphopharynx



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144 Fig 2: The Acrylic Denture



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