A denture swallowed. Case report

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Abstract
Swallowing and aspiration of dental foreign objects is often reported in the literature. Swallowing seems to be more common than aspiration, and is observed most often in the elderly. Too often the size and configuration of these objects compounds their impaction and removal. A 67-year-old man swallowed a unilateral removable partial denture which became lodged in his mid-oesophagus. The denture was located by radiographic examination of his chest and removal by a rigid oesophagoscopy was performed under general anaesthetic.

Key words: Aspiration, swallowing, denture, radiography, endoscopy, case report.

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Introduction
A review of the literature shows that swallowing or aspiration of dental foreign objects is not uncommon. These objects have included endodontic instruments, rubber dam clamps, crowns, inlays, posts and cores, fixed prostheses, and complete and partial removable prostheses. It has been observed that aspiration occurs less frequently than swallowing. This has been especially so in the case of removable prostheses.

Swallowing of dentures seems to be most common in the older or mentally ill population where impaired neurological function and/or a decrease in the level of oral awareness seem to be more evident. It has also been suggested that a loss of tactile sensation of the hard and soft palates due to long-term denture use is another contributing factor.

The swallowing of removable prostheses present greater retrieval problems as their size and configuration normally prevent a smooth glide through the gastrointestinal tract, and quite often prevent their passage even if the size of the prosthesis impacts in the oesophagus. Whereas smaller and more regular objects (such as a crown or fixed bridge) are reported to be most often passed, the retrieval of removable prostheses invariably involves surgical intervention. The complications arising from swallowed removable prostheses include laceration, perforation, and haemorrhage of the oesophagus and gastrointestinal tract, which can in turn cause peritonitis, sepsis or result in foreign body granulomas, abscess formation, fistulas or even penetration into the kidneys. In one case reported, an 180 mm section of ileum needed to be resected as part of the surgical retrieval.

Occasionally, the realization of a prosthesis being swallowed or inhaled may not be made for some time and the object may remain lodged in the patient's oesophagus or larynx for an extended period before it is recognized. This has been reported several times in mentally incompetent patients where, in one case, the denture had been lost for eleven months and had caused varied symptoms and discomfort before it was identified. In another case, the patient was suspected of having a laryngeal carcinoma before the inhaled denture was identified.

As removable prostheses are often made of radiolucent materials, their swallowing or aspiration can make radiographic identification difficult and hence may also prevent their detection, especially when a history of swallowing or inhalation is not observed — as can happen in the elderly or mentally incompetent patient. It has, therefore, been suggested that radio opaque discs, foil, or patient identification be placed during fabrication to aid in radiographic identification.

Case report
A 67-year-old man presented to the Casualty Department of his regional hospital claiming that he had swallowed his mandibular partial denture whilst eating. He complained of worsening pain and general discomfort in the retrosternal region. He stated that he had worn a mandibular two-tooth acrylic partial denture with wrought clasps replacing his two missing mandibular central incisors for several years. Initial films viewed by the attending medical officer prompted disbelief in the man's claims. However, a subsequent radiographic examination of his chest by a radiologist revealed the presence of the partial denture lodged in the mid-oesophagus, in a region immediately behind the left atrium (Figs. 1-3).

He was referred to the Repatriation General Hospital, Greenslopes, Brisbane, where he was admitted for observation overnight. During the night, he experienced a worsening of the intermittent pain, although he was able
to swallow saliva and had no difficulty breathing. He was allowed nil by mouth, and 1 litre of normal saline was administered by intravenous tube early the next morning.

It was planned to take the man to theatre on the following day and attempt to remove the denture with an oesophagoscope. However, if this proved unsuccessful, surgical removal was to be attempted. As it was not possible to arrange a thoracic surgeon for that day, the procedure was postponed twenty-four hours. The patient was continued on nil by mouth, and prescribed intravenous amoxycillin, xylocaine viscous prn and morphine.

The next day an endoscopy performed under general anaesthetic revealed the presence of the partial denture lodged within the mid-oesophagus. An attempt was made to remove it with a flexible oesophagoscope which failed, and final removal was achieved with a rigid oesophagoscope.

Following removal of the denture, intravenous antibiotics were continued (amoxycillin and gentamycin), and the patient was permitted 30 mL water sips hourly. Late on the fourth evening the patient's condition had improved sufficiently to allow a cessation of the intravenous therapy and to begin soft diet and fluids. He was placed on oral antibiotics (amoxycillin) and was discharged five days after the incident, suffering only from soreness upon swallowing. He was kept on oral antibiotics for a further forty-eight hours and aside from a sore throat, his recovery was uneventful.

**Discussion**

This case report illustrates many of the points discussed in the literature. A mandibular unilateral partial denture was swallowed which impacted in the mid-oesophagus due to its size and shape. There was an initial difficulty in identification and localization of the denture due to it being made of radiolucent acrylic with little metal framework. Then there was concern by the medical personnel of complications — namely of perforation of the oesophagus and bleeding into the mediastinum. In this case, retrieval
was possible by oesophagoscopy, although surgical retrieval was considered and had been prepared for.

The above case is a further example of the need for good design and adequate retention of removable prostheses. The literature shows that most concern is for unilateral partial prostheses and most authors suggest that placement of a fixed bridge is preferable to a removable denture in this situation. 7, 8, 15

Summary

Accidental ingestion of removable prostheses is most commonly observed in the elderly and mentally incompetent persons. Most common is the swallowing of removable prostheses which become lodged in the oesophagus or small intestine. Radiographic identification and localization can be difficult and the inclusion of radiopaque materials into the denture base is strongly suggested. An emphasis is placed on good design and retention of the denture base, and the provision of unilateral, removable partial prostheses is strongly discouraged, especially for elderly or mentally incompetent patients.

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References


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