

# Oesophageal-impacted denture requiring open surgery

Chua Y K D, See J Y, Ti T K

## ABSTRACT

**The successful removal of impacted denture in the oesophagus in a patient is reported, with a review of the literature. A 36-year-old Malay man complained of dysphagia after swallowing his denture. Following unsuccessful attempts at removal via a rigid oesophagoscope, open surgery was performed. Without further delay, the impacted denture was removed by cervical oesophagotomy, and the patient recovered uneventfully. Oesophageal foreign bodies are usually removed by endoscopy. However, in situations where this appears potentially hazardous, such as with impacted denture, open surgical extraction that is promptly performed is a safe option.**

**Keywords:** cervical oesophagostomy, dentures, foreign body, oesophagoscopy

*Singapore Med J 2006; 47(9):820-821*

## INTRODUCTION

Foreign body ingestion is the most common acute otolaryngological problem in Singapore<sup>(1)</sup>. Most cases are successfully treated by oesophagoscopy. However, extraction of impacted dentures is often problematic<sup>(2)</sup>. We report a case of impacted oesophageal denture that required open surgery.

## CASE REPORT

A 36-year-old Malay man swallowed his denture while sleeping. He complained of odynophagia, blood-stained sputum, and pain localised to lower part of his neck. At presentation, nasopharyngoscopy did not reveal any foreign body. Cervical radiographs (Fig. 1) revealed a linear C-shaped opacity located anterior and left to the C7/T1 vertebra, consistent with the wire clasp of a denture. Examination under general anaesthesia with rigid oesophagoscopy was done by an otolaryngologist six hours after admission. A large denture was noted 24 cm distal to the incisors. Superficial lacerations of



**Fig. 1** Anterolateral radiograph of the cervical spine shows the denture wire at C7 level.

oesophagus were noted at the denture site. The wire of the denture could not be seen, suggesting it to be inferiorly-positioned and embedded. Multiple attempts were made to remove the denture with forceps through the rigid oesophagoscope but the denture could not be dislodged. The rigid oesophagoscopy could not be passed further to visualise the lower border of the impacted denture.

The patient was then referred to Upper Gastrointestinal Service for open surgical removal, 14 hours after admission. Under general anaesthesia, with a sandbag placed below the left shoulder and head turned to the right, a left transverse neck incision was made. The strap muscles of the neck were divided. The middle thyroid vein was ligated and through the space between thyroid gland and carotid sheath, the cervical and upper thoracic oesophagus were identified. A cotton tape was placed to encircle the oesophagus taking care not to damage the recurrent laryngeal nerves in close relation to it. With the tape retracting the oesophagus forward and superiorly, thus making

**Department of  
Otolaryngology  
Changi General  
Hospital  
2 Simei Street 3  
Singapore 529889**

Chua Y K D, MBBS  
Resident

**Department of  
Surgery  
National University  
Hospital  
5 Lower Kent  
Ridge Road  
Singapore 119074**

See J Y, MBBS,  
MMed, MRCSE  
Registrar

Ti T K, MD, FRCS,  
FRACS  
Professor and Senior  
Consultant

**Correspondence to:**  
Dr Dennis Chua Y K  
Tel: (65) 6259 7387  
Fax: (65) 6373 1350  
Email: dennis.chua.yk@gmail.com



**Fig. 2** Operative photograph shows the denture being retrieved via oesophagostomy.

it more accessible, a transverse incision was made at the site of the impacted foreign body. A 3 cm long acrylic broken denture was found to be tightly impacted in the oesophagus. It was held in position in the oesophagus by a curved wire from the broken denture which had perforated the oesophagus at its free end (Fig. 2). Following manual removal of the impacted denture, the oesophagostomy was repaired with a single layer of interrupted 3-0 silk.

The patient recovered well in the postoperative period. He was kept nil-by-mouth for the first postoperative day, and nasogastric feeding was started on the second postoperative day. Intravenous ceftriaxone and metronidazole was given for a total for seven days. On the seventh postoperative day, a gastrografin study showed no evidence of leakage or stenosis of the oesophagus. Since then, he has been well and is taking a normal diet.

## DISCUSSION

In Western literature, meat is the main foreign body ingested in adults, and coins are the most frequent object in children. In Singapore, fish bones are quoted as the commonest object, comprising up to 83.9% of foreign body ingested locally<sup>(1)</sup>. Following foreign body ingestion, patients usually present with dysphagia (92%) and tenderness of the neck (60%)<sup>(2)</sup>. Other symptoms include: inability to swallow oral secretions, hypersalivation, retrosternal fullness, regurgitation of undigested food, and odynophagia. In children, stridor and dyspnoea may be encountered due to tracheal compression.

The diagnosis is usually easily elicited if the patient is able to give a reliable history, as is the case with our patient. Radiological imaging can determine the exact site of radio-opaque impacted

foreign body, as well as air entrapment if there is perforation. Dentures, however, are frequently made of acrylic resin which is radiolucent<sup>(3)</sup>, though the radio-opaque wire clasps of the denture can sometimes be seen, if present, as in this patient.

Because of its large size, sharp edges, metal clasps, endoscopic extraction of dentures carries a high risk of oesophageal perforation of 23%<sup>(3,4)</sup>. Successful endoscopic extraction needs considerable experience, good visualisation during rigid oesophagoscopy, and the use of shears forceps<sup>(4)</sup>. When any of these conditions are lacking, removal by oesophagostomy by an experienced oesophageal surgeon is a safer option. In our patient, the denture wire causing impaction could not be visualised and hence, there was no means of removing it endoscopically.

Most swallowed foreign bodies are impacted at the cervical and upper oesophagus and can be removed by cervical oesophagostomy without thoracotomy. Nevertheless, oesophagostomy has the risk of oesophageal leakage which is a potentially fatal complication. To avoid this complication, open surgery for impacted foreign body should be done in specialist centres by an experienced oesophageal surgeon. A precondition for good results, as emphasised by the previous reported experience in our hospital<sup>(5)</sup>, is early treatment. Delayed treatment of impacted foreign body leads to perforation and necrosis of oesophageal wall<sup>(6)</sup>, and may result in mediastinitis. Surgery at this stage will have a high incidence of oesophageal leakage and mortality.

The experience of this present case illustrates that prompt management of an impacted denture in the oesophagus leads to quick and uneventful recovery. When endoscopic extraction is not feasible, immediate open surgical extraction should be performed.

## REFERENCES

1. Lim CT, Quah RF, Loh LE. A prospective study of ingested foreign bodies in Singapore. *Arch Otolaryngol Head Neck Surg* 1994; 120:96-101.
2. Khan MA, Hameed A, Choudhry AJ. Management of foreign bodies in the esophagus. *J Coll Physicians Surg Pak* 2004; 14:218-20.
3. Nwafo DC, Anyanwu CH, Egbue MO. Impacted esophageal foreign bodies of dental origin. *Ann Otol Rhinol Laryngol* 1980; 89 (2 Pt 1):129-31.
4. Nwaorgu OG, Onakoya PA, Sogebi OA, Kokong DD, Dosumu OO. Esophageal impacted dentures. *J Natl Med Assoc* 2004; 96:1350-3.
5. Loh KS, Tan LK, Smith JD, Yeoh KH, Dong F. Complications of foreign bodies in the esophagus. *Otolaryngol Head Neck Surg* 2000; 123:613-6.
6. Abdullah BJ, Teong LK, Mahadevan J, Jalaludin A. Dental prosthesis ingested and impacted in the esophagus and orolaryngopharynx. *J Otolaryngol* 1998; 27:190-4.