

Asymptomatic entrapped denture in the hypopharynx

Shogo Hanai ¹, Teruhiko Terasawa,² Mitsunaga Iwata²

¹Department of Diagnostic and Generalist Medicine, Dokkyo Medical University, Shimotsuga-gun, Tochigi, Japan

²Department of Emergency and General Internal Medicine, Fujita Health University School of Medicine, Toyoake, Aichi, Japan

Correspondence to

Dr Shogo Hanai;
shogo.hanai1990@gmail.com

Accepted 1 November 2022

DESCRIPTION

An early 70s asymptomatic man with cerebral infarction and dementia was brought to our emergency department for ingesting a removable partial denture. This was seen incidentally on his follow-up chest X-ray, having been diagnosed with aspiration pneumonia provisionally 3 days earlier (figure 1). He did not recall ingesting the denture. His vital signs were normal. There were no abnormal respiratory sounds, such as stridor, wheezing or crackles, heard on auscultation. The 3D-images of the cervix obtained by plain, multidetector CT (MDCT) showed that the denture was in the hypopharynx (figure 2); a laryngeal endoscopy identified the denture in the upper oesophagus, with its metallic clasp entrapped by the postcricoid region. For airway maintenance, tracheostomy was performed, followed by the transoral retrieval of the denture. The clasp was detached from the cervical oesophagus using laryngoscope-guided forceps under local anaesthesia. Pressure ulcers were noted but healed spontaneously as observed by the follow-up laryngeal endoscopy. He was discharged on day 16 of admission.

Foreign body aspiration (FBA) is a potential life-threatening event and typically develops in infants <12 months of age, and occasionally in older adults (>75 years), or in patients with mental disorders regardless of age.¹ In adults, dental prosthesis devices such as dental crowns and dentures are a commonly reported cause.¹ Adult patients with a small FBA such as a dental crown lodging in the



Figure 2 3D-multidetector CT.

trachea are often asymptomatic or could display only minor symptoms.¹ In contrast, symptoms of ingested or aspirated large dentures lodging in the laryngopharynx to upper oesophagus or larynx could vary depending on the impaction sites (table 1).

In the case of large complete or partial dentures lodging in the larynx, typical symptoms include coughing, choking, hoarseness and gagging.¹ For instance, a recently reported case of a complete denture aspiration lodging over the oropharynx to laryngopharynx in a cachexic elderly man presented with explicit symptoms including dyspnoea, wheezing, dysphonia and dysphagia.² Another case of an accidental complete denture ingestion lodging in the upper oesophagus in a woman with schizophrenia and dementia also had symptoms including chest discomfort and pain.³ However, in the present case with an accidentally ingested large partial denture lodging in the laryngopharynx to upper oesophagus, the patient developed fever but did not present with the symptoms described above.

Plain X-rays, a conventional first-line imaging for suspected FBA, may fail to detect dentures made of radiolucent materials such as polymethyl methacrylate, especially when radio-opaque wire hooks are absent.⁴ Therefore, experts suggest obtaining highly sensitive MDCT-based 3D-images as an alternate imaging option for patients with suspected FBA and presenting typical clinical symptoms.⁵ MDCT-based 3D-images are also an effective way to triage patients who need rigid bronchoscopy.⁵ The 3D-MDCT images in our case precisely localised the impacted denture in the laryngopharynx and appropriately guided the transoral retrieval.



Figure 1 Chest X-ray.



© BMJ Publishing Group Limited 2022. No commercial re-use. See rights and permissions. Published by BMJ.

To cite: Hanai S, Terasawa T, Iwata M. *BMJ Case Rep* 2022;**15**:e248487. doi:10.1136/bcr-2021-248487

Table 1 Recent case reports of ingested dentures lodging in the laryngopharynx to upper oesophagus or larynx

Case (country)	Age (sex)	Comorbid conditions	Context of aspiration or ingestion	Time from onset to diagnosis	Symptoms at diagnosis	Diagnostic modality	Lodged location	Dental prosthesis devices (size, mm)
Haghighi and Shoaie 2015 ² (Iran)	90s (M)	Severe cachexia	Accidental ingestion	2 days	Dyspnoea, wheezing, dysphonia and dysphagia	Lateral neck X-ray	Oropharynx to hypopharynx	A complete denture (50 × 50)
Tanaka <i>et al</i> 2022 ³ (Japan)	70s (W)	Dementia, schizophrenia and deafness	Accidental ingestion	28 hours	Chest discomfort and pain	CT	Upper oesophagus	A full denture (67)
Present case (Japan)	70s (M)	Cerebral infarction and dementia	Accidental ingestion	3 days	None	Chest X-ray	Hypopharynx to upper oesophagus	A partial denture with metallic clasp (66.3 × 26.3)

Learning points

- ▶ Foreign body aspiration is a potential life-threatening event and typically develops in infants <12 months of age, and occasionally in older adults (>75 years), or in patients with mental disorders regardless of age.
- ▶ Adult patients with a small foreign body aspiration lodging in the trachea are often asymptomatic or display minor symptoms. Foreign body aspiration in the larynx can present very subtle symptoms even when a large denture is the cause.

In conclusion, foreign body ingestion or aspiration in the laryngopharynx can present very subtle symptoms even when a large denture is the cause.

Contributors All authors had access to the data. SH wrote the initial draft. TT and MI revised the manuscript.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Consent obtained from next of kin.

Provenance and peer review Not commissioned; externally peer reviewed.

Case reports provide a valuable learning resource for the scientific community and can indicate areas of interest for future research. They should not be used in isolation to guide treatment choices or public health policy.

ORCID iD

Shogo Hanai <http://orcid.org/0000-0002-8316-8540>

REFERENCES

- 1 Rafanan AL, Mehta AC. Adult airway foreign body removal. what's new? *Clin Chest Med* 2001;22:319–30.
- 2 Haghighi M, Shoaie SD. Pharyngeal aspiration of complete upper denture in 90-Year-Old man; a case report. *Emerg* 2015;3:117–9.
- 3 Tanaka Y, Sato Y, Ohno S, *et al*. A possible indicator for removal of a large foreign body from the esophagus via a cervical approach: a case report with literature review. *Clin J Gastroenterol* 2022;15:333–8.
- 4 Mughal Z, Charlton AR, Dwivedi R, *et al*. Impacted denture in the oesophagus: review of the literature and its management. *BMJ Case Rep* 2019;12. doi:10.1136/bcr-2019-229655. [Epub ahead of print: 25 Oct 2019].
- 5 Tong B, Zhang L, Fang R, *et al*. 3D images based on MDCT in evaluation of patients with suspected foreign body aspiration. *Eur Arch Otorhinolaryngol* 2013;270:1001–7.

Copyright 2022 BMJ Publishing Group. All rights reserved. For permission to reuse any of this content visit <https://www.bmj.com/company/products-services/rights-and-licensing/permissions/>
 BMJ Case Report Fellows may re-use this article for personal use and teaching without any further permission.

Become a Fellow of BMJ Case Reports today and you can:

- ▶ Submit as many cases as you like
- ▶ Enjoy fast sympathetic peer review and rapid publication of accepted articles
- ▶ Access all the published articles
- ▶ Re-use any of the published material for personal use and teaching without further permission

Customer Service

If you have any further queries about your subscription, please contact our customer services team on +44 (0) 207111 1105 or via email at support@bmj.com.

Visit casereports.bmj.com for more articles like this and to become a Fellow