CASE REPORT

Mislaid dentures: a cause for unusual presentation of bilateral vocal cord palsy

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SUMMARY

An 81-year-old man was referred urgently to the head and neck clinic with symptoms of worsening dysphagia, dysphonia and weight loss. He had a history of chronic lymphocytic leukaemia. On full ear, nose and throat examination, he was found to have fixed vocal cords with pooling of saliva in the bilateral pyriform fossa. Hypopharyngeal malignancy was suspected and further imaging was performed. Imaging also raised the suspicion of malignancy in the hypopharynx. Rigid endoscopic examination under general anaesthesia was carried out which revealed an impacted denture in the cricopharynx and upper oesophagus. The patient was aware of his loss of dentures 3 months ago (corresponds to the onset of his symptoms) but felt that he had mislaid them and had never mentioned this to anyone. We present a case highlighting a delay in diagnosis, a missed diagnosis on CT scan and an unusual presentation leading to bilateral vocal cord paresis.

BACKGROUND

Twenty per cent of the population aged between 18 and 74 years use either a partial or full denture. Usage of a denture increases with advancing age. Denture foreign bodies in the upper aerodigestive tract are a common finding in the elderly edentulous population. There have been several reports in the literature of denture foreign bodies in the hypopharynx and cervical oesophagus. Their removal has been shown to be problematic with associated significant morbidity. There can be a significant delay in the diagnosis increasing the possibility of complications. Hypopharyngeal/oesophageal foreign bodies cause acute dysphagia; however, bilateral vocal cord paresis as a result of a foreign body in the hypopharynx or cervical oesophagus has not been reported.

Our goal is to increase awareness among the specialist community that radiology cannot always be relied on for correct diagnosis and that a delay in diagnosis can lead to symptoms other than dysphagia.

CASE PRESENTATION

An 81-year-old man was referred to us pursuant to admission on haematology for treatment of right lower lobe pneumonia. He had a history of chronic lymphatic leukaemia. The patient also reported dysphagia for solids and progressive odynophagia with associated weight loss. Initial flexible laryngopharyngoscopy on the ward showed pooling in the hypopharynx without any obvious tumour, ulceration or foreign body. Subsequently, the patient was referred to the head and neck oncology clinic by

which time he had developed dysphonia as well. Repeat flexible endoscopy revealed right vocal cord paralysis with persistent pooling of saliva. Contrast-swallow X-ray and a CT scan were requested. The patient's symptoms continued to deteriorate and a further endoscopy after a CT scan revealed bilateral vocal cord paralysis.

INVESTIGATIONS

A contrast swallow and a CT scan were requested but patient only attended for CT scan.

CT scan imaging had shown a diffuse thickening and ulceration of the hypopharynx. The radiological findings raised the suspicion of carcinoma (figure 1). Multiple small lymph nodes were present throughout the neck, mediastinum and both axillae, consistent with a history of chronic lymphocytic leukaemia. The lungs were clear.

DIFFERENTIAL DIAGNOSIS

Dysphagia is a common symptom in variety of clinical settings including primary care and specialist alike. With an ageing population, it has become an even more common presentation in the primary setting. The differential diagnosis ranges from pharyngeal and oesophageal malignancies to neuromuscular disorders. Patients with foreign body ingestion or impacted dentures present acutely with symptoms and the clear history from the patient guides the clinician. In this particular case, the patient could not remember any foreign body ingestion, which made us suspect a carcinoma, and imaging was also not helpful.

TREATMENT

Rigid endoscopic examination was carried out under a general anaesthetic which revealed an

Figure 1 Diffuse thickening and ulceration of the hypopharynx, raising a suspicion of malignancy.

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Figure 2 Impacted three teeth denture plate which was removed.

impacted three teeth denture plate in the postcricoid region and cervical oesophagus (figure 2). The foreign body was removed completely without mucosal injury. The mucosal lining appeared to be very inflamed; however, no obvious malignancy was identified. Mucosal biopsies were taken from areas of inflammation.

OUTCOME AND FOLLOW-UP

Mucosal biopsies confirmed chronic inflammation suggested due to chronic irritation from the dentures for a long time. His dysphagia resolved immediately after extraction of the foreign body and there were no additional complications. Dysphonia also resolved in the immediate postoperative period and the mobility of both vocal cords was confirmed on repeat flexible endoscopy on return to the ward.

The patient was made aware of the nature of the foreign body and was rather surprised to hear that his denture impaction was the source of his symptoms of dysphagia and dysphonia. The disappearance of his denture corresponded with the onset of symptoms, that is, 3 months before admission. The patient was aware of his loss of denture but felt that he had mislaid them. On further review 4 weeks after discharge, he was completely asymptomatic without any evidence of vocal fold paresis.

DISCUSSION

Foreign bodies in the pharynx are a common reason for referral to otolaryngology. Initial investigations include a flexible nasopharyngolaryngoscopy. Radiological imaging such as a soft tissue X-ray of the neck is often performed but is rarely helpful. Rigid endoscopy is employed for removal of a suspected or definitive foreign body.

Symptoms of foreign body ingestion are diverse and include neck pain, dysphonia, dysphagia, odynophagia, choking, retrosternal pain, fever, haemoptysis and regurgitation. Dentures form a significant proportion of ingested foreign bodies. Only 11.5% of impacted tracheal or oesophageal foreign bodies are dentures, which also account for the second most commonly ingested objects in adults.¹ The aetiology of vocal cord palsy include malignant disease (25%), surgical trauma (20%), idiopathic (13%), inflammation (13%), non-surgical trauma (11%) and neurological (7%).² Vocal cord paralysis is a very uncommon presentation of an ingested foreign body.

The majority of dentures in the UK are made from polymethylmethacrylate and as such are radiolucent. Thus, plain film X-rays cannot be used to exclude their presence. They sometimes have metal pins which may be visible, but these are easily missed. In the reported literature, a barium swallow is advocated; however, it is of limited value.

As highlighted by this case, CT is also unreliable for detection of radiolucent foreign bodies in the upper digestive tract. CT imaging cannot reliably differentiate between pharyngeal and oesophageal soft tissues and a radiolucent foreign body.

A delay in diagnosis and management of an ingested foreign body can lead to serious and even fatal complications. Broncho-oesophageal and oesophago-broncho-aortic fistulae have been reported due to impacted dentures in the thoracic oesophagus.^{3 4} Recurrent laryngeal nerve palsy has been reported due to impaction of an ingested denture in the thoracic oesophagus. Ingested and impacted dentures in the oesophagus have been reported to cause oesophageal perforation with mediastinitis.

Our case highlights the difficulty in timely diagnosis of ingested dentures. Suspicion of malignancy creates more anxiety in the patient and the family. Often, elderly patients cannot be relied on to give a clear and reliable clinical history as typified by this case. CT imaging cannot be relied on to make a definitive diagnosis. Flexible pharyngolaryngoscopy is helpful only if the foreign body is above the postcricoid region. Transnasal pharyngo-oesophagoscopy is a more valuable examination technique if it is available in the department. Vocal cord paralysis due to impaction of a foreign body in the hypopharynx and cervical oesophagus is an extremely uncommon presentation. We aim to highlight the difficulties inherent in making a timely diagnosis and advocate rigid endoscopy in case of persistent dysphagia.

CONCLUSION

Vocal cord paralysis secondary to impaction of a denture in the hypopharynx and cervical oesophagus has not previously been reported and appears to be an extremely uncommon and reversible presentation. Rigid endoscopy is the mainstay of diagnosis and management, particularly with persistent symptoms in the elderly population.

Learning points

- ▶ Suspect dentures as a foreign body ingestion in elderly edentulous patients with unusual symptoms in the upper aerodigestive tract.
- ▶ Imaging may not always be very helpful and therefore cannot be relied on.
- ▶ Clinical suspicion and early intervention prevents serious complications.
- ▶ Rigid endoscopy is the mainstay of diagnosis and management.

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Competing interests None.

Patient consent Obtained.

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