

**Misadventures With A Missed Denture – A Malignant Masquerade**

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**ABSTRACT****INTRODUCTION**

Retained oesophageal foreign body is a rare condition, which requires urgent intervention. Symptoms associated with chronic retained foreign body are varied but are mainly related to gastrointestinal or respiratory system, which delays the final diagnosis and further management.

**CASE REPORT**

We present a 55 year male patient with chronic retained impacted denture for eight months in cervical oesophagus, which masqueraded as an esophageal malignancy. The foreign body was successfully removed using rigid oesophagoscope.

**CONCLUSION**

This case report highlights the importance of considering a retained foreign body as a differential diagnosis when malignancy could not be explained by standard work up.

**Key words:** Foreign body, Oesophagus, Malignancy, Denture

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**INTRODUCTION**

Management of foreign bodies accidentally ingested into the esophagus is a commonly encountered emergency in an otolaryngologists practice. The nature of the foreign body aspirated differs according to the age group. Coins, toys and jewels are commonly ingested accidentally in children, while meat boluses, fish and meat bones being the common foreign bodies aspirated into the esophagus in adults.<sup>1</sup> In elderly population dental prostheses are the commonly encountered esophageal foreign bodies.<sup>1</sup> Majority of these dental prostheses are radiolucent especially those without metal reinforcements and in the absence of a definitive

history pose serious challenges in evaluation and management.<sup>2</sup> Here we report a case of a retained, neglected denture detected eight months after ingestion, which was mimicking an oesophageal malignancy during an extensive workup for progressive dysphagia and stridor in an elderly adult male.

### **CASE REPORT**

A 55-year-old male patient presented to the emergency services of our otolaryngology department with difficulty in breathing of one month, associated with noisy breathing for two days, which brought him to the emergency department. The patient in addition had difficulty in swallowing more for solids than liquids for the past 3 months. The dysphagia was insidious in onset, was initially for solid foods and then progressed to difficulty in swallowing liquid foods. There was no history suggestive of any foreign body ingestion, trauma, neurological illness or prior surgery. On clinical examination, the patient had severe biphasic stridor. The pulse rate was 120 per min and regular in rhythm. The blood pressure was 110/70mm of Hg. The respiratory rate was 46 per minute with an oxygen saturation in room air of 80%. On neck examination, laryngeal crepitus was absent. Indirect laryngoscopic examination showed pooling of saliva in bilateral pyriform fossa with normal vocal cord mobility.

Immediate resuscitative measures were instituted with 100% high flow oxygen through a mask and Inj. Hydrocortisone 100mg intravenously was given. Chest X-ray posterior anterior and soft tissue neck (STN) lateral views were done immediately. STN lateral view X- ray revealed prevertebral soft tissue widening extending from C4 to T2 maximum bulge against C6 with compression of trachea compromising the airway (Figure 1). Vertebral bodies were normal and intervertebral disc spaces were maintained.

After getting due consent the patient was taken up for emergency tracheostomy to secure the airway using portex cuffed tracheostomy tube (size 7.5). Keeping the provisional diagnosis of cervical oesophageal malignancy based on history, clinical examination and radiological investigation, a rigid oesophagoscopy using Jackson oesophagoscope of size 12×18×400 was done under general anesthesia which showed proliferative circumferential lesion in the upper cervical oesophagus mimicking malignancy. A biopsy was taken from the lesion and sent for histopathological examination and Ryle's tube was inserted. However, histopathological examination of the biopsy specimen revealed non-specific inflammatory granulation tissue.

On further evaluation with contrast enhanced computed tomography (CECT) of the neck and thorax as a part of work up for oesophageal malignancy, there was an asymmetric mildly enhancing thickening of post cricoid hypopharynx and proximal cervical oesophagus with few small hyper attenuating foci causing mass effect and posterior compression on subglottic and trachea with airway narrowing (Figure 2). In view of strong suspicion of malignancy on CECT imaging, a repeat oesophagoscopy examination and multiple punch biopsies from the lesion was planned to guide further management.

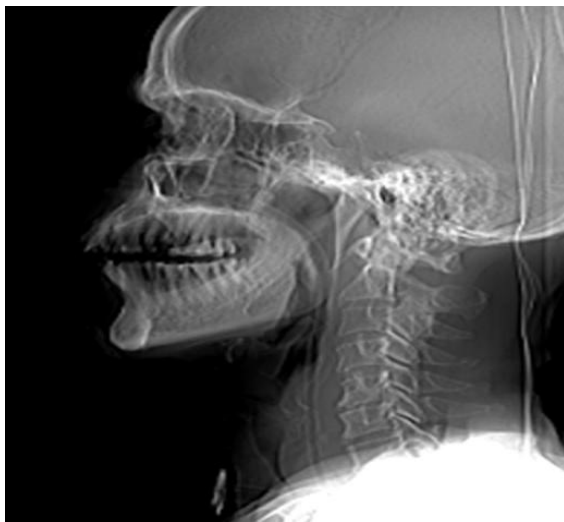
Repeat rigid oesophagoscopy under general anesthesia using Jackson oesophagoscope revealed friable proliferative lesion in the upper cervical esophagus. While taking biopsy from multiple deeper sites a firm to hard structure was felt and on gentle probing a retained

foreign body like structure was found embedded in the proliferative tissue just below the cricopharyngeal sphincter level approximately 18 cm from upper incisors. The foreign body was split into two separate parts possibly due to the manipulation. Using alligator forceps, the foreign body was withdrawn together with the oesophagoscope. The foreign body was successfully removed and identified as a denture, which consisted of one tooth along with jaw plate (Figure 3).

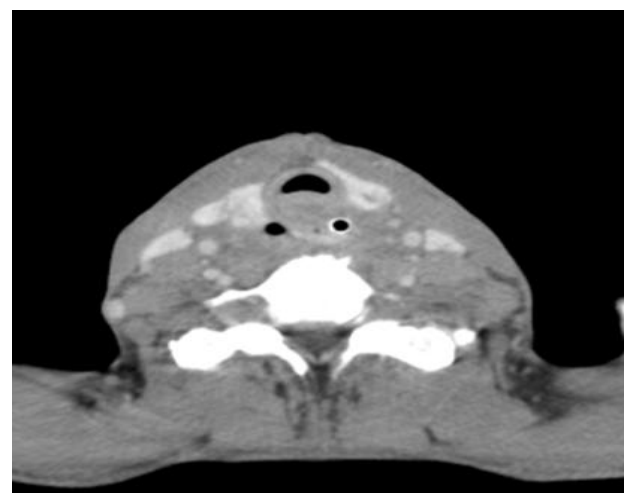
Upon further questioning retrospectively, we found that the patient had used detachable dentures eight months back and was missing the same. Though he was asymptomatic, had sought medical attention at that time from a general practitioner to whom he had told that he was unsure if he had accidentally ingested or misplaced the denture. A chest and neck radiograph was obtained which was negative for any radio-opaque foreign body and he was reassured that he would have probably misplaced the denture and even if he would have accidentally swallowed, it would pass in the stool. The patient neglected the entire episode as he was totally asymptomatic at that point of time

At follow up two weeks after the removal of foreign body, the patient was asymptomatic and tolerating regular diet. Seven months after the procedure he was totally asymptomatic, the granulation tissues disappeared on endoscopic examination (Figure 4) and he was decannulated successfully. Barium swallow revealed resolution of the cervical oesophageal narrowing.

**Figure 1. Post tracheostomy STN lateral view X- ray showing prevertebral soft tissue shadow widening extending from C4 to T2 maximum bulge against C7 with compression of trachea.**



**Figure 2. CECT of the neck and thorax showing asymmetric mildly enhancing thickening of postcricoid hypopharynx with few small hyperattenuating foci causing mass effect and posterior compression on subglottis. Nasogastric tube insitu.**



**Figure 3. Follow up endoscopic view at 3 months showing patent oesophageal lumen with healed mucosa over cricopharyngeal sphincter level.**



**Figure 4. Showing removed foreign body.**



## **DISCUSSION**

Accidental ingestion or aspiration of foreign body into the oesophagus is one of the common emergencies encountered by the ENT surgeon. Pediatric patients, elderly, alcoholics, developmentally challenged and psychiatric patients are high-risk populations susceptible for accidental foreign body ingestion.<sup>3</sup> Poor oral sensitivity, edentulousness, poor laryngopharyngeal motor control and oesophageal diseases predispose the elderly for foreign body aspiration and impaction.<sup>4</sup> Most of the ingested foreign bodies pass through the gastrointestinal tract without any unfortunate events<sup>5</sup>. Impacted foreign bodies usually present acutely with difficulty in swallowing, pain while swallowing, increased salivation and neck discomfort. Foreign bodies commonly get impacted in one of the three oesophageal anatomical constrictions: the cricopharyngeal ring, the aortic arch narrowing or the oesophago-gastric junction<sup>6</sup>. However, not all oesophageal foreign bodies present in the acute period following ingestion. Sometimes, the patient can be asymptomatic which can lead to delay in the presentation, as it happened in our case.

Symptoms of retained foreign body depend on the duration of retention, type of foreign body, site of impaction and are mainly gastrointestinal or respiratory. Gastrointestinal complaints commonly include dysphagia and odynophagia. Commonly reported pulmonary complaints are cough, respiratory distress, chest pain, and stridor. In our patient the foremost complaint was respiratory distress with stridor due to tracheal compression, which brought him to the hospital. Chronic retained foreign body in digestive tract more often presents with respiratory complaints (76%) than with gastrointestinal complaints (22%).<sup>6</sup> Our patient presented with both respiratory and gastrointestinal symptoms. Oesophageal foreign bodies may cause mediastinal inflammation and significant extrinsic tracheal compression, both of which should be evident on radiological investigation. A radiological imaging can determine the exact site of the radiopaque impacted foreign body.

Dentures account for 3.9–8.6 % of upper gastrointestinal tract foreign bodies and are associated with complications in 80% of the cases.<sup>7</sup> In a study by Abdullah et al out of 200 patients with a known history of an impacted tracheal or esophageal foreign body, dental prostheses accounted for 11.5% of the case.<sup>8</sup> Dentures can be a partial or complete and may or may not have metal reinforcements. Complete dentures are entirely made of polymethylmethacrylate resin, which is a non radio-opaque material and do not have a metal framework which makes them difficult to visualize radiologically.

Prolonged impaction of dentures with sharp metal reinforcements can cause peri-oesophagitis, necrosis, perforation of the oesophageal wall and fistula formation. It has been reported that more than 24 hours after the ingestion, the rate of complications multiplies from 3.2% at 24 hours to as high as 23.5% after 48 hours.<sup>9</sup> In our patient the denture was not evident by radiological investigation as there was no metal reinforcements.

Our patient presented with stridor to the emergency services and tracheostomy was done to secure a stable airway. As the patient presented with progressive dysphagia and prevertebral soft tissue widening on radiological examination without any history of foreign body oesophagus a biopsy was done in the same sitting. Further evaluation for malignancy along with a negative biopsy prompted as to take up the patient for repeat rigid oesophagoscopy and biopsy, which revealed a retained foreign body in the upper cervical oesophagus.

The management of impacted dentures depends on the size, configuration, the type of denture, duration of impaction, the location of the impaction (cervical vs. thoracic oesophagus), clinical presentation of the patient, and associated complications<sup>7</sup>. Endoscopic attempts to remove the denture can be attempted in the following situations 1) The patient presents immediately after ingestion, 2) Complete denture 3) Small partial dentures in which the sharp metal clips can be visualized easily and without any oesophageal mucosal penetration. If the dentures are large Shears forceps can be used to fragment the dentures before extraction. Open surgical approach should be used to remove dentures when there is esophageal wall penetration, associated with complications like mediastinitis and fistula formation.

In our patient the denture was a complete one without any metal endings and the foreign body was amenable to gentle manipulation and removal by rigid oesophagoscopy. Only two case reports of a retained foreign body masquerading as cervical oesophageal malignancy has been reported previously.<sup>10</sup>

## **CONCLUSION**

Impacted dental prostheses can lead to serious complications. Management should be a multidisciplinary team approach and should include evaluation of the object type and location, as well as considerations that are likely to predict the likelihood of a perforation, such as relationship of the denture to sites of anatomic narrowing, size and shape of the foreign body, age of the patient and duration of impacted foreign body. This case report

highlights the importance of considering the possibility of neglected, retained foreign body in an elderly when there is sudden onset respiratory symptoms with the specific finding of stridor suspecting malignancy, which could not be explained by a standard workup. Even in the absence of dysphagia the patient should be investigated thoroughly with the high index of suspicion and the role of the primary care physician in the early detection is indispensable.

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