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Unusual Complications of a Dental Prosthesis Esophageal Foreign Body: About a Case

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Abstract

Foreign bodies of the esophagus are part of the traumatic emergencies in ENT. They are most often encountered in children, whereas in adults they occur in a particular context and are rarely overlooked. This was a 48-year-old patient from a neighboring country referred by a colleague for a history of neglected laryngeal contusion with infectious cervical fistula evolving for 2 years. Further questioning revealed a notion of accidental ingestion of dentures. The first endoscopy was of capital interest in the diagnosis and especially in the management of this old and enclosed foreign body. The extraction under general anesthesia was done by a combined endoscopic and external approach. The postoperative course was marked by superinfection and swallowing disorders. Cervical suppurations related to an esophageal foreign body are rare, especially in adults. We must think about this in the face of any chronic cervical suppuration that resists treatment.

Keywords

Dentistry, Foreign Body, Cervicotomie

1. Introduction

A dental prosthesis is the replacement of one or more lost teeth with plastic or porcelain teeth, either with an acrylic base to hold them in place or with metal clips to secure them to adjacent teeth [1]. Accidental ingestion of prostheses is an emergency that can immediately jeopardize functional prognosis. Its management re-

quires immediate management and rapid treatment to avoid complications like migration, cervical abscess, or fistula. In the event of failure of esophagoscopic extraction, external surgical removal (cervicotomy) must be performed [1].

The significance of this case report lies in the specific clinical presentation characterized by a diagnostic error, the vulnerable type of foreign body, the occurrence of a complication such as perforation followed by cervical fistula, and the extraction difficulties justifying a combined approach.

2. Case Report

This was a 48-year-old patient with no particular medical history, originally from Guinea Conakry, working as a lumberjack, who reportedly suffered a cervical contusion from direct trauma from a tree branch in 2018. He had initially received medical treatment with antibiotic, corticoids and antalgics for laryngeal trauma. The subsequent course was complicated by the development, one month after, of mechanical dysphagia with dysphonia followed two weeks after by the progressive development of a productive left laterocervical fistula (**Figure 1**).

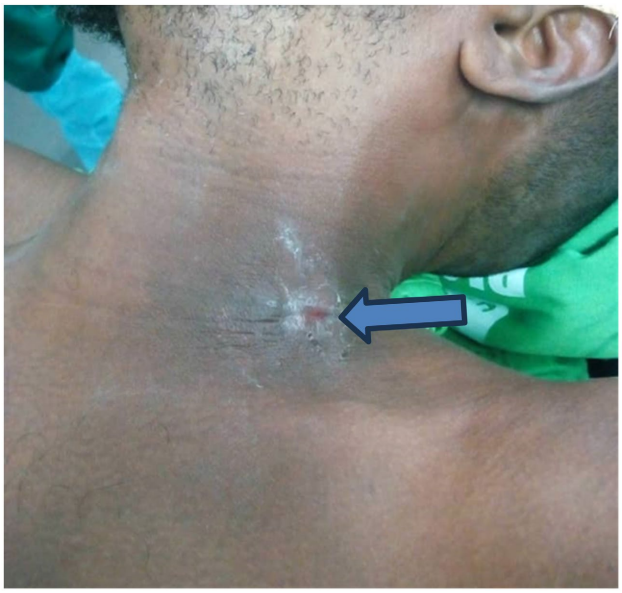

Figure 1. Productive cervical fistula (blue arrow).

A CT scan showed a pattern of left cricoarytenoid subluxation with asymmetry in the width of the bands. Given this clinical presentation, an ENT colleague referred him to us for better management.

The clinical examination at admission found a fairly good general condition, a productive left latero-basic-cervical fistula. The examination of the oral cavity found multiple edentulism. The nasofibroscopy had made it possible to assess hypomobility of the left hemi-larynx.

Rereading the initial CT scan revealed endolaryngeal hypodensity resembling a gas bubble and retrolaryngeal bone-like hyperdensity associated with pharyngeal thickening with left posterior endolaryngeal inflammation (**Figure 2**).

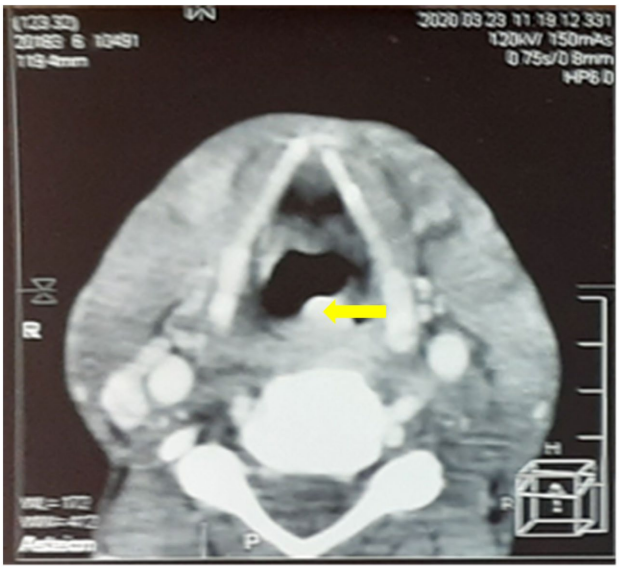

Figure 2. A retrolaryngeal bony hyperdensity (yellow arrow).

Given these radiological doubts and the cervical fistula, the diagnosis of neglected cervical trauma with pharyngocutaneous fistula was suggested and rigid tube endoscopy was indicated.

After the endoscopic discovery of solid food debris hiding a foreign body located approximately 18 centimeters from the upper dental arch, further questioning revealed the notion of accidental ingestion of a dental prosthesis at the time of the work accident in Guinea. Thus, an esophago-gastro-duodenal transit (OGDT) and a computed tomography (CT) scan were requested. The OGDT was compatible with a traumatic lesion of the hypopharynx with fistulization and left paracervical abscess (**Figure 3**).

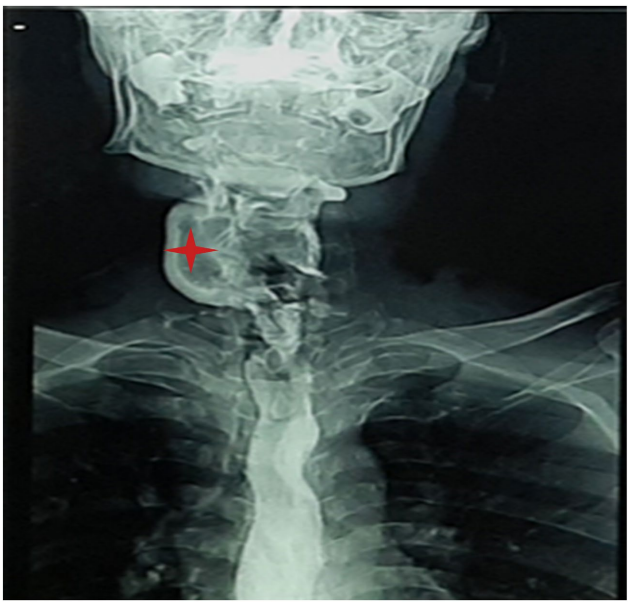

Figure 3. Left paracervical abscess (red star).

While the CT showed a V-shaped esophageal foreign body (Figure 4) with very likely a circumscribed old abscess collection and development of fibrosis around it. The presence of an esophageal fistula without tracheal involvement.

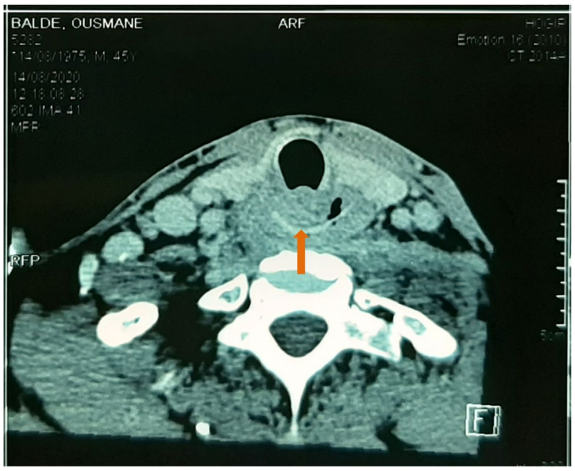

Figure 4. Axial CT scan of the neck showing a V-shaped foreign esophageal body (orange arrow).

A rigid tube endoscopy was indicated for the extraction of a pharyngoesophageal body, such as a dental prosthesis. We used an oesophagoscope and an optical 0-degree.

Given the entrapment of the foreign body, making extraction via natural routes impossible, the intraoperative decision to use a combined cervical approach was made.

The left cervicotomy incision was made along the anterior edge of the sternocleidomastoid muscle followed by an isthmotomy after reclining the coverage planes allowing access to the laryngeal region and control of the left inferior laryngeal nerve. The approach to the cervical esophagus opposite the foreign body was made by endoscopic guidance (Figure 5).

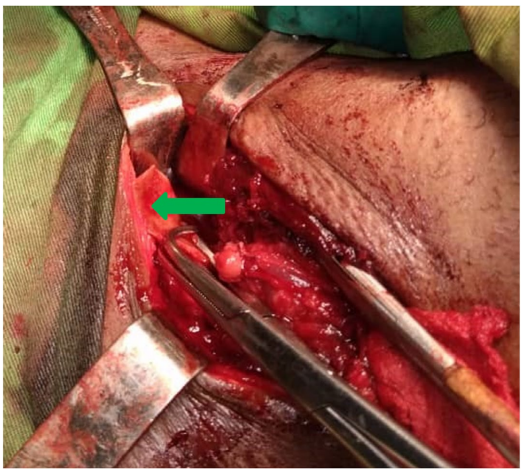

Figure 5. Extraction of a large prosthesis with sharp edges (green arrow).

It allowed the extraction of a bulky prosthesis with sharp edges (Figure 6).

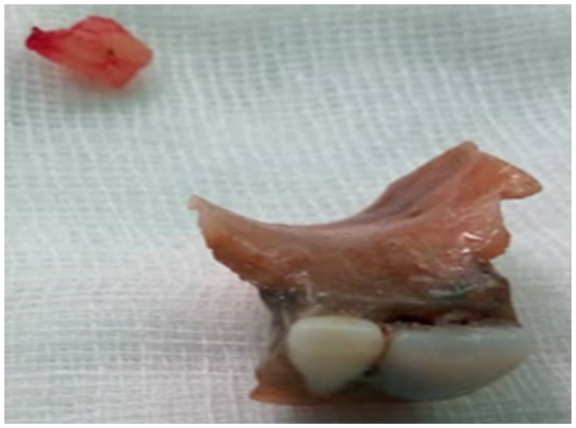

Figure 6. Dental prosthesis with sharp edges.

The esophagotomy repair consisted of a double extramucosal suture with 3/0 absorbable suture followed by repair of the inferior pharyngeal constrictor muscle.

A nasogastric feeding tube was inserted. The patient was then given antibiotics (amoxicillin clavulanate) and pain relief.

The postoperative course was complicated by an infection characterized by saliva oozing from the sutured wound on day 1. A swab followed by a bacteriological study with antibiogram isolated a strain of Enterobacter cloacae sensitive to ciprofloxacin, and antibiotic therapy was adjusted. Discharge was proposed on day 10 postoperatively, with good clinical progress.

Removal of the nasogastric tube was proposed on postoperative day 45 with an OGDT showing false route bronchogram images without extravasation of the contrast agent. This was truly a pharyngeal swallowing disorder. The control nasofibroscopy demonstrated hypomobility of the left hemilarynx.

3. Discussion

Foreign body ingestion is a common problem, particularly among young children and patients with conditions that limit cognition and communication, such as stroke and mental retardation [2] [3].

Among upper aerodigestive tract foreign bodies, esophageal foreign bodies account for approximately 60% of cases [4], twice as common as bronchial foreign bodies, particularly in children [5].

Foreign bodies primarily affect children under 6 years of age, accounting for 76% of 663 cases, and adults over 50 years of age [6]. In adults, the peak incidence is in the 70th year of age, and the authors emphasize the beneficial role of dentures due to the lack of food contact with the palatal mucosa [7].

Doumbia *et al*. in Mali had found that foreign bodies in adults accounted for 37% of all foreign bodies in the esophagus over a 2-year study period [8].

A literature review shows that Deguenonvo *et al*. found, in a 6-year retrospec-

tive study in Senegal, 332 patients complaining of accidental ingestion of foreign bodies, including 14 cases (3%) of dentures. Foreign bodies are usually impacted at the first anatomical constriction (70%), which is located at the thoracal entrance at the level of the cricopharyngeal muscle [9] [10].

Apart from underlying psychiatric disorders, diagnosis is generally easy to obtain if the patient is able to provide a reliable history and is based on questioning. Patients present for actual or suspected ingestion within the first 24 hours in 70% of cases.

When the concept of ingestion is unknown, this delay can be several months [11] [12] or even several years [13]. There is a correlation between the severity of local complications of ingested foreign bodies and the time elapsed between ingestion and admission [14].

The diagnostic error noted in our observation could be explained by the fact that cervical trauma, initially the circumstances of the occurrence of the ingestion accident, had occupied the forefront of the picture. However, suspicious images were already present on the CT scan.

Sharp foreign bodies are more aggressive and initial or secondary perforations have been reported [14]. Perforations are most often proximal, occurring in less than 1% of cases when it involves an intraesophageal foreign body and in 15% to 30% of cases when the foreign body has crossed the stomach. Bone ridges, dentures or bone splinters carry, in addition to the risk of perforation, an additional risk of infection and can cause mediastinitis, cellulitis, or a paraesophageal abscess. Any suspicion of an esophageal foreign body is a formal indication for esophagoscopy even if physical and radiological examinations are negative [14]. A rapid decision for open surgery is needed in case of failure of the endoscopic attempt or any complication untreatable with endoscopy [15].

One of the complications of foreign body ingestion is the inextirpable foreign body. It is either immediately removed or after one or more attempts at endoscopic extraction. The extraction will then be done by a surgical approach. Deguenonvo *et al*. reported a case of extraction by esophagotomy after several attempts by endoscopic approach [1]. In our observation, we chose a combined endoscopic and external approach, thus allowing easy identification of the entrapped foreign body.

Surgical exploration allows the search for the ingested foreign body and specifies its nature and location. It also allows for a precise lesion assessment to search for local complications such as perforation, vascular and nervous lesions. At the level of the cervical esophagus, esophagotomy by left cervicotomy followed by suturing of the esophagus with the insertion of a nasogastric feeding tube is preferable. However, a right cervicotomy has been described in a case of perforation of the esophagus in the posterior part of its upper third [12].

The average length of hospital stay varies depending on the chosen therapeutic modality. It does not exceed 2 days for endoscopy while it can reach 4 days for monitoring or even 6 days when the treatment is surgical. We deduce that endoscopic extraction of foreign bodies allows for shortening the length of hospital

stay, which gives this therapeutic method an additional advantage. Deguenonvo *et al*. described a case of postoperative recurrent paralysis which is not the case in our patient, whose recurrent paralysis is preoperative.

4. Conclusion

Accidental ingestion of prostheses is an emergency that can immediately jeopardize functional prognosis. Its management requires immediate management and rapid treatment. Police questioning to identify the ingestion accident can help make the diagnosis. External neck exploration would be the method of choice for the extraction of entrapped foreign bodies.

Conflicts of Interest

The authors declare that there is no conflict of interest.

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