

# A Case of Tooth Aspiration in the Left Bronchus During a Boat Trip: A Potential Life-Threatening Condition

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DOI: <https://doi.org/10.51244/IJRSI.2024.1110006>

Received: 25 September 2024; Accepted: 30 September 2024; Published: 28 October 2024

## ABSTRACT

### Introduction

The foreign body aspiration represents a life-threatening event, especially when huge sizes, and it is considered the most frequent cause of accidental home deaths in infancy, while uncommon in adults.

### Case Report

Herein we describe a case of asymptomatic tooth aspiration in a 58-year-old-female undergoing chemotherapy for bowel adenocarcinoma during a boat trip.

### Conclusion

This report highlights four important learning points: the importance of suspecting a tooth aspiration in an oncological patient during chemotherapy; the management of a potential emergency during a boat trip; the chest X Ray could be sufficient; a fibrobronchoscopy is possible even if the foreign body lies in a less accessible position.

## INTRODUCTION

The foreign body (FB) aspiration is uncommon in adults. At Emergency Room (ER) the diagnosis could be misdiagnosed with respiratory infections, pneumonia, chronic obstructive pulmonary disease and asthmatic attack, especially in children (1,2)

It could represent a life-threatening event, especially when huge sizes, and it is considered the most frequent cause of accidental home deaths in infancy. (3) In adults, the most affected groups include mentally disabled and psychotic patients, prisoners, and alcoholics. (4)

The tooth aspiration into the tracheobronchial tree is already described in literature, but relatively rare. (5) Generally dental procedures represent the second most common cause of FB aspiration. (6) After the diagnosis, the FB could be successfully extracted using the bronchoscope, with a high success rate. (7) Herein we describe a case of asymptomatic tooth aspiration

## CASE REPORT

A 58-year-old-female presented to our ER with a clinical complaint characterized by dyspnea and peevish cough since almost 10 hours. She also reported to have accidentally swallowed a natural tooth in concomitance with the onset of respiratory symptoms, during a boat trip. Fortunately, the symptoms were not

life-threatening during the trip, anyway it was kept under strict surveillance by the medical staff on board. Past medical history was positive for Graves-Basedow Disease, right mastectomy for breast cancer 7 years ago, right hemicolectomy for infiltrating ileocecal valve adenocarcinoma 3 years ago and actually in chemotherapy, right ovariectomy and cholecystectomy. The patient has been positive for Covid-19 eight months earlier and received the first dose of vaccine two months ago. The vital parameters were normal, with oxygen saturation 96%. Clinical investigation showed only a reduction in vesicular murmur in the left mid-basal chest quadrant. Laboratory findings only showed an aspecific increase in Polymerase Chain Reaction (PCR) 20 mg/L. The Chest X-ray showed the presence of a dental element at the level of the distal portion of the left main bronchus. (FIG. 1,2) Not considering the indication to perform a Computed Tomography (CT) scan or a Magnetic Resonance Imaging (MRI), the diagnosis being clear, and after consulting the pulmonologist, the patient was scheduled for bronchoscopy.

The procedure was performed under deep sedation, using a rigid bronchoscope. The procedure was technically very difficult due to the FB position. ( FIG. 3) Finally the tooth was grasped and pulled out. (FIG. 4)

The postoperative course was uneventful.

## DISCUSSION

A symptomatic FB ingestion is frequent in children and uncommon in adults. (1) The commonest aspirated bodies into the respiratory tract are food such as nuts, small seeds and chewing gum (8), while the teeth and dental prosthetics are the second most common leading cause of FB aspiration after food; representing up to 27.7% of this event's causes [9]. The commonest risk factors, in addition to pediatric age, are elderly, acute neurological problems, mental retardation, ingestion of drugs, loss of consciousness and psychiatric disorders. (2) Generally the patient presents in ER with acute respiratory symptoms, cough, dyspnoea, fever and sometimes hemoptysis. (4)

In our case we noticed two peculiarities: in those days the patient was undergoing chemotherapy for an intestinal adenocarcinoma and the foreign body had migrated into the left main bronchus. As reported in literature, there is a possible relationship between systemic medications including anticoagulants, ACE inhibitors and statins as well as systemic medical conditions including hypertension, glaucoma, anxiety and depression and periodontitis.(10)

Otherwise patients undergoing chemotherapy have reduced salivation and frequent mucositis with fragility of the dental alveolus and greater risk of tooth loss. (11) In particular chemotherapy generally might have an impact on general oral health, generating changes in the flora due to its antibacterial effect or reducing the trabecular bone density. (12)

Regarding the concomitant boat trip, from a careful analysis of the scientific literature, actually we have not found data available. (13)

In this case the clinical suspicion of airway obstruction related to the aspiration of a tooth, in an oncologic patient, with consequent high risk of spontaneous detachment of a natural tooth, leads to a correct diagnosis in a short time without performing unnecessary tests in ER such as the CT scan or MRI. The presence of the FB in the left bronchus, rather than as more commonly occurs in the right one, represented a greater technical difficulty during the bronchoscopy but from a clinical point of view it does not seem to have had a significant impact.

## CONCLUSION

In conclusion this report highlights some important learning points. Firstable it is important to suspect a tooth aspiration in an oncological patient during chemotherapy, as suggested by Zhang Y et al. (11)

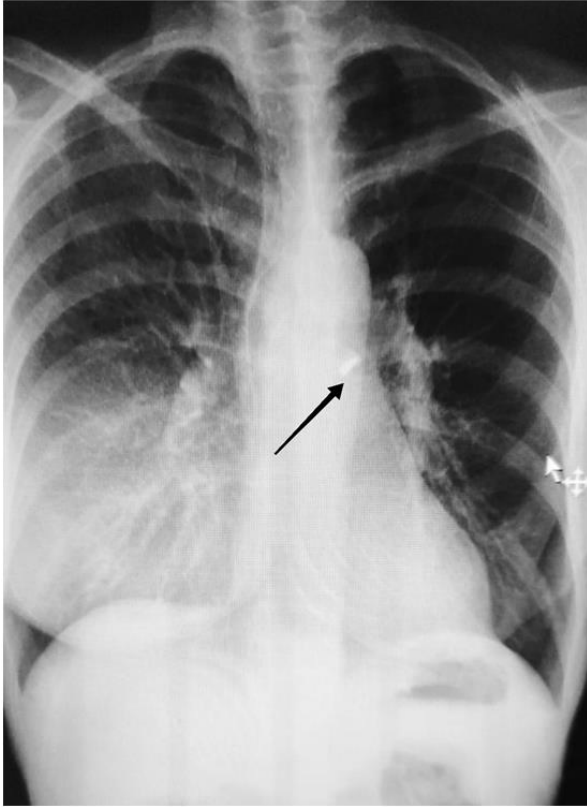
Secondly, if the clinical suspicion is well posed, a chest X Ray is sufficient. (8)

Finally, rigid fibrobronchoscopy is possible even if the FB is in a less accessible position. The absence of scientific literature concerning the aspiration of FB during a boat trip could be an interesting idea for next case series or case reports, deepening the critical issues related to the emergency.

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## FIGURES



FIG, 1The Chest X-Ray shows the tooth into the left main bronchus

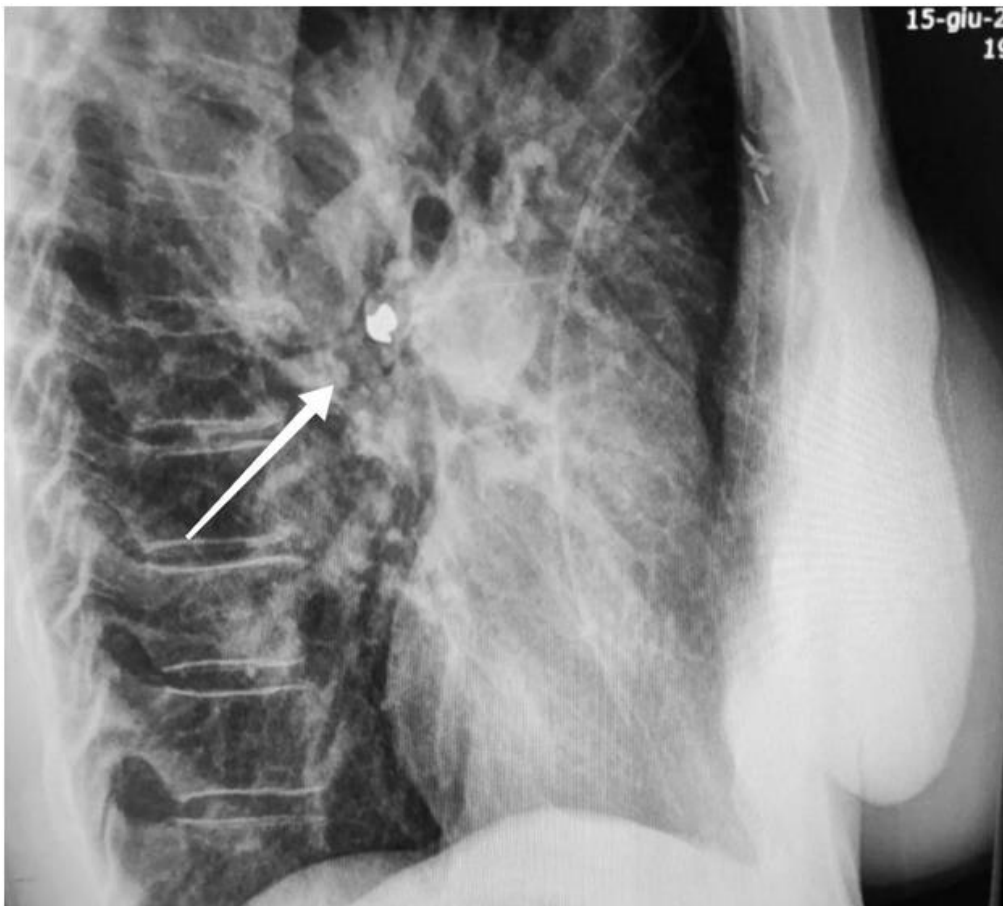


FIG. 2 Chest X-ray, lateral position

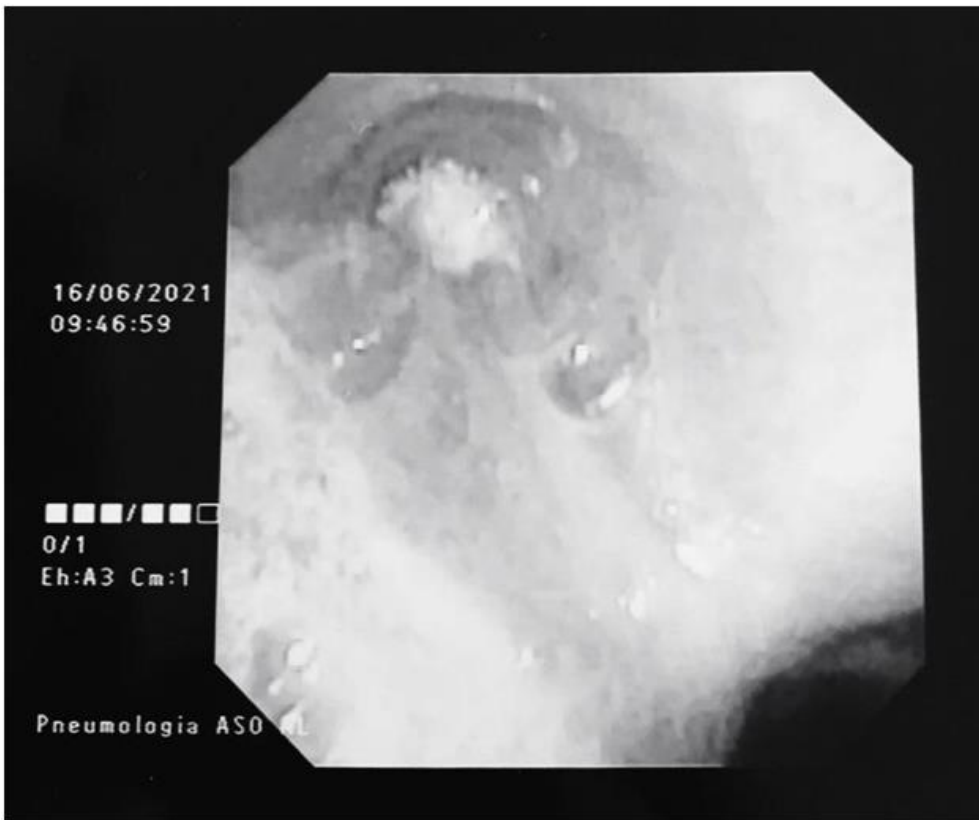


FIG. 3 On bronchoscopy, the tooth almost completely occludes the main bronchus

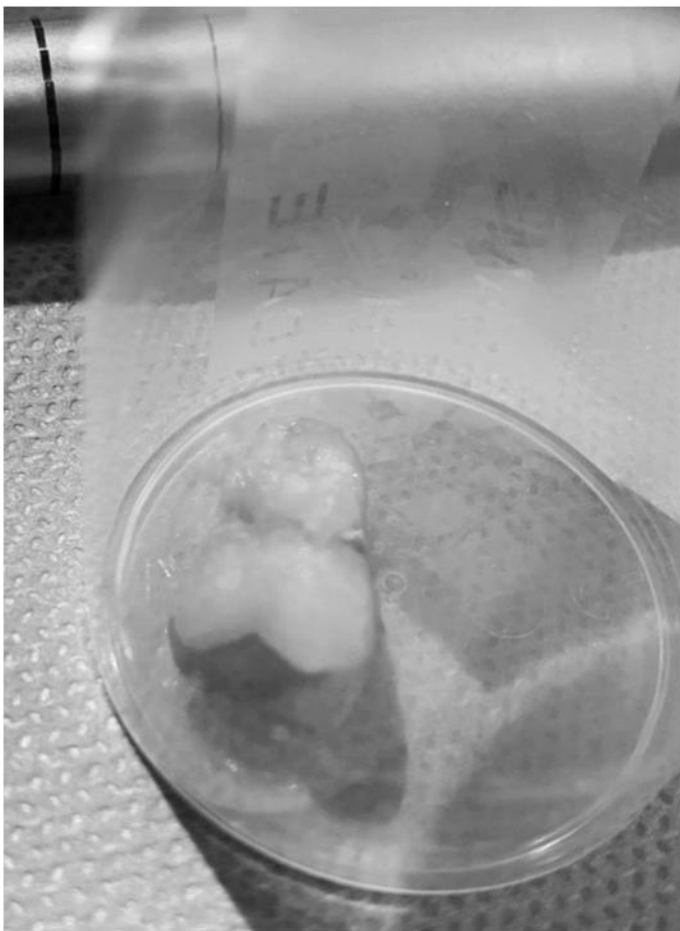


FIG. 4 The tooth is removed entirely