

# Retracted: An Aspirated Tooth Masquerading As Lung Cancer: A Unique Case Report

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## This article has been retracted.

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This article has been retracted by the Editor-in-Chief due to conflicting claims of authorship that cannot be adjudicated. The authors have requested retraction to avoid further issues and, after careful consideration, the journal has agreed to retract. In addition, there is one key scientific error in the article as the aspirated material was a tooth filling, not an actual tooth as claimed.

## Abstract

Tooth aspiration, while commonly linked to predisposing conditions such as loose teeth, facial surgeries, or injuries, can also affect patients without apparent risk factors. Such small foreign body aspirations may go undiagnosed for many months as patients often tolerate the symptoms, such as chronic cough. However, the protracted course of unaddressed foreign body aspiration has the potential to resemble symptoms of malignancy, including persistent hemoptysis, weight loss, and fatigue. In this report, we detail the case of a 51-year-old man with underlying chronic obstructive pulmonary disease (COPD) whose history and symptoms initially suggested lung carcinoma. Further investigation uncovered an aspirated tooth as the culprit. The sequelae of pulmonary complications arising from endobronchial obstruction, such as post-obstructive pneumonia and atelectasis, as demonstrated in our case, further emphasize the importance of prompt detection and management of tooth aspiration.

**Categories:** Dentistry, Internal Medicine, Pulmonology

**Keywords:** dental care, flexible bronchoscopy, recurrent aspiration pneumonia, endobronchial foreign body, tracheobronchial foreign body aspiration

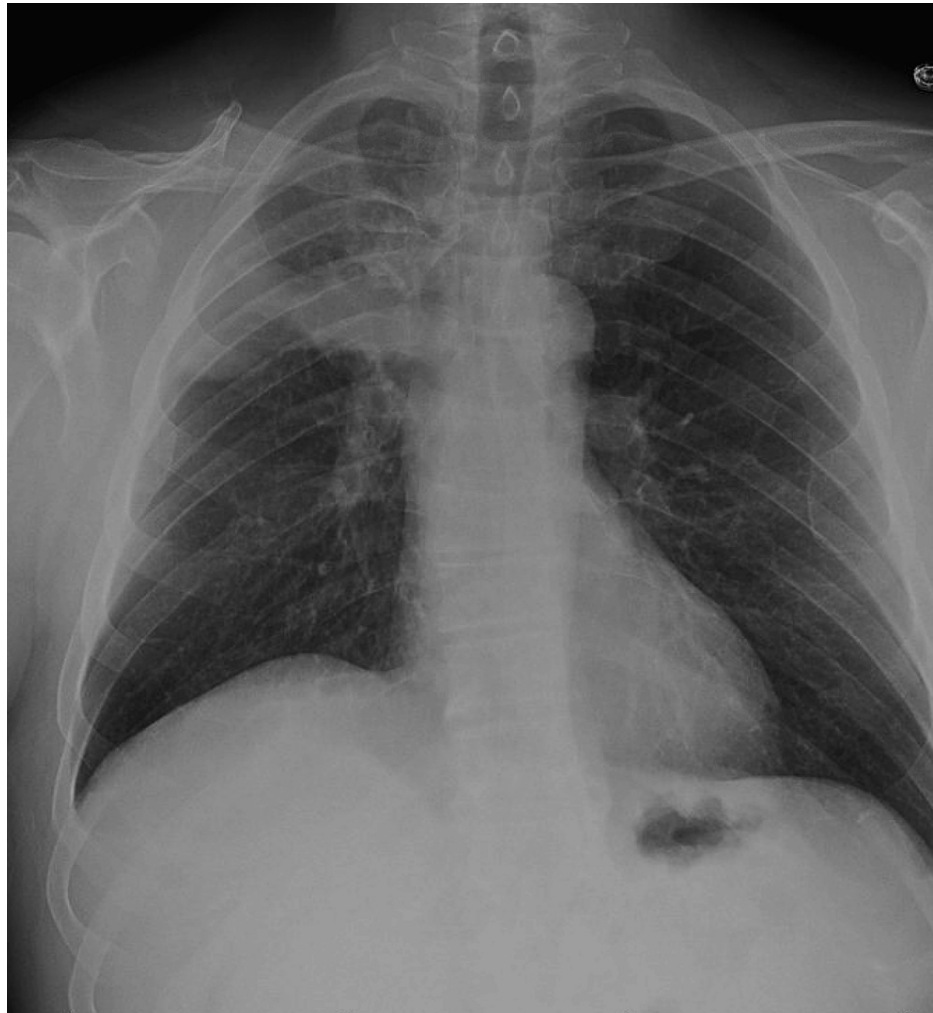
## Introduction

Tooth aspiration is a rare yet potentially fatal complication of maxillofacial procedures, traumatic injuries, and tracheal intubation [1]. Though rare in healthy adults, it poses significant challenges in diagnosis due to its varied presentations, often mimicking other respiratory ailments such as pneumonia, asthma/chronic obstructive pulmonary disease exacerbation, or even occult malignancies. Diagnosing aspirated foreign bodies is often done through chest X-ray (CXR) and computed tomography (CT) scans, and removal can be performed with bronchoscopy. Early intervention is essential for proper management of aspiration of foreign bodies as complications, including pneumonia and lung abscesses, may develop over many months [2,3]. Herein, we present a unique case of a 51-year-old male exhibiting a constellation of symptoms pointing towards malignancy; however, diagnostic techniques eventually revealed the presence of an aspirated tooth. This case highlights the importance of considering foreign body aspiration in the differential diagnosis of respiratory symptoms, even in adults without apparent risk factors for aspiration.

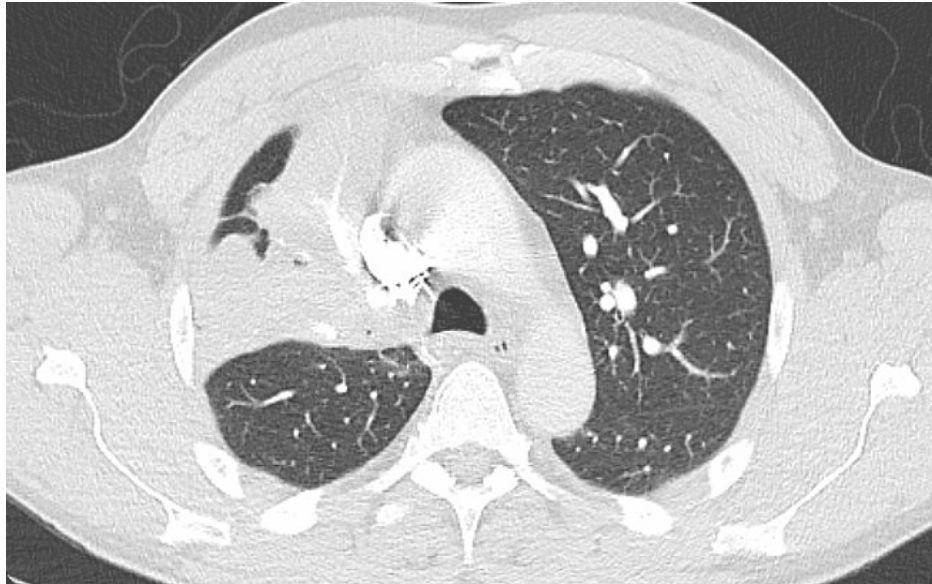
## Case Presentation

Our patient is a 51-year-old male who presented to the emergency department (ED) with a seven-month history of progressive shortness of breath, nonproductive cough, and intermittent hemoptysis. He had a >20-pound unintentional weight loss throughout this time. His past medical history was significant for chronic obstructive pulmonary disease (COPD) and tobacco use (30 pack-year history; quit 11 months prior). His COPD had been controlled with fluticasone, umeclidinium, and vilanterol triple inhaler therapy, as well as montelukast. He had also been intermittently prescribed oral antibiotics and steroids for the chronic cough, which often produced malodorous, blood-streaked sputum that was variable in color (i.e., yellow, green, brown). The patient had a recent exacerbation of hemoptysis ten days prior to admission, in which he coughed up a tablespoon of blood.

Upon ED evaluation, the patient endorsed right-sided chest pain, exacerbated by activity. Physical examination revealed decreased breath sounds over the right lung field. Laboratory workup was unremarkable apart from mild neutrophilic leukocytosis of 12.6 cells/ $\mu$ L and normal procalcitonin of 0.04 ng/mL. CXR was notable for patchy right upper lobe (RUL) consolidative opacities, most suggestive of pneumonia (Figure 1). Axial chest CT with intravenous (IV) contrast ruled out pulmonary embolism but showed a RUL consolidation concerning for post-obstructive pneumonia (Figure 2), supportive of the CXR findings. Bronchoscopy revealed right mainstem bronchus endobronchial obstruction, atelectasis of the RUL, and chronically inflamed mucosa. A whitish mucus plug-appearing lesion occluded the entire lumen of the right upper lobar bronchus and was not removed despite suctioning and lavage. Bronchoalveolar lavage yielded negative bacterial and fungal cultures. The endobronchial biopsy was consistent with bronchitis, with no malignant cells identified.

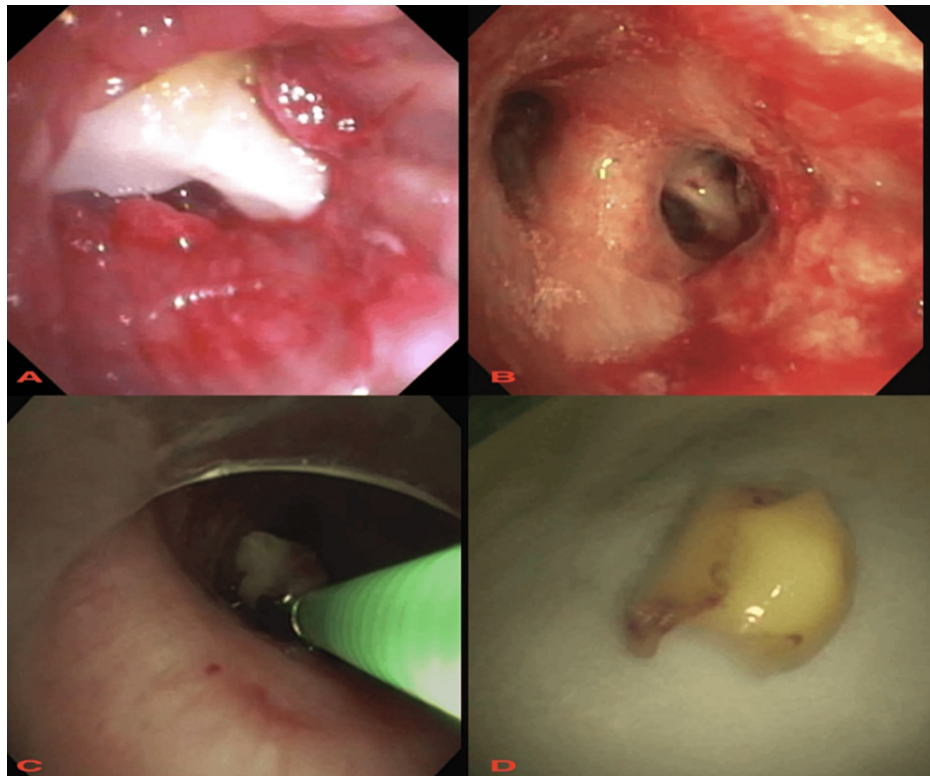


**FIGURE 1: Chest X-ray showing focal airspace consolidation in the right upper lobe consistent with developing pneumonia**



**FIGURE 2: Axial CT with IV contrast of the chest showing focal airspace consolidation in the right upper lobe consistent with post-obstructive pneumonia**

He was started on intravenous piperacillin-tazobactam and azithromycin for pneumonia. A repeat bronchoscopy (Figure 3) conducted two days later revealed a foreign body lodged in the RUL bronchus. It appeared to be the patient's tooth, with overlying mucus that was almost completely obstructing the entire RUL. The foreign body was successfully removed using alligator forceps. Upon retraction, the foreign body within the forceps was obstructing the endotracheal tube lumen. The patient was extubated in order to retrieve the foreign body and was then reintubated. Bronchoalveolar lavage on both procedures was negative for acid-fast bacilli, pneumocystis, histoplasmosis, blastomycosis, and aspergillosis. The patient was discharged with a four-week course of amoxicillin/clavulanic twice daily with a plan to repeat the chest CT scan in an outpatient setting.



**FIGURE 3: Bronchoscopy findings showing a) complete obstruction of the right mainstem bronchus, b) chronic inflammation and granulation tissue formation in the right upper lobe airway, and c,d) a foreign body identified and retrieved consistent with an aspirated tooth**

## Discussion

Early intervention of foreign body aspiration is necessary to prevent serious medical complications, including complete obstruction of the respiratory airways [4]. Although tooth aspiration particularly is often associated with loose teeth, maxillofacial procedures, or trauma, patients of all age groups can be affected. Those with neurological conditions are at a greatly increased risk of foreign body aspirations [5]. Our patient, however, provides us with a unique perspective into the nuances of assessing for such conditions. Without any notable traumatic events, remarkable dental injuries, or neurological disorders, his initial clinical management primarily addressed his symptoms under the presumption of a COPD exacerbation. As such, clinicians should rely on a comprehensive diagnostic approach, integrating clinical suspicion, radiological findings, and the patient's specific clinical course.

The clinical course of foreign body aspirations varies vastly between patients and is influenced by factors such as the size of the aspirated object. Larger foreign bodies typically prompt immediate symptoms of coughing, stridor, and wheezing [6]. Conversely, a smaller foreign body, such as an aspirated tooth, may cause complications in the lower respiratory tract with the potential for a prolonged, dire course mimicking a list of potentially serious differential diagnoses. These differentials may include malignancy and, as seen in our patient, post-obstructive pneumonia.

Our patient's significant, unintended weight loss, in conjunction with his extended smoking history, ultimately raised suspicion for lung carcinoma, provoking extensive diagnostic measures. Still, we suggest that indications for biopsy should be considered to rule out malignancy even with mild suspicion, especially in cases when a definitive diagnosis has not yet been established. We also urge that attention should be paid to the prevention of aspirated teeth not only in the dental setting but also in medical settings with otherwise healthy patients. Primary care doctors play a crucial role in promoting oral health by encouraging patients to attend regular dental check-ups, thus facilitating early detection and prevention of dental issues.

## Conclusions

The possibility of a protracted asymptomatic course or mild respiratory symptoms, such as cough and hemoptysis, as evidenced in our case, suggests the need for routine monitoring and evaluation for aspiration in for patients with such symptoms. The heterogeneous presentation of respiratory manifestations may

complicate the ability to diagnose patients with tooth aspiration, particularly when underlying respiratory conditions like COPD lead to consideration of alternative differentials. Meticulous consideration of smaller foreign-body aspirations can significantly lessen the incidence of complications arising from an extended medical trajectory.

## Additional Information

### Author Contributions

All authors have reviewed the final version to be published and agreed to be accountable for all aspects of the work.

**Concept and design:** Ali Khreisat, Meghan Mansour, Roa'a AlKloub, Emmanuel Meram

**Acquisition, analysis, or interpretation of data:** Ali Khreisat, Meghan Mansour, Roa'a AlKloub, Bhavinkumar Dalal, Emmanuel Meram

**Drafting of the manuscript:** Ali Khreisat, Meghan Mansour, Roa'a AlKloub, Emmanuel Meram

**Critical review of the manuscript for important intellectual content:** Ali Khreisat, Meghan Mansour, Roa'a AlKloub, Bhavinkumar Dalal, Emmanuel Meram

**Supervision:** Bhavinkumar Dalal

### Disclosures

**Human subjects:** Consent was obtained or waived by all participants in this study. **Conflicts of interest:** In compliance with the ICMJE uniform disclosure form, all authors declare the following: **Payment/services info:** All authors have declared that no financial support was received from any organization for the submitted work. **Financial relationships:** All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. **Other relationships:** All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

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