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Occult Foreign Body Aspiration in a Child with Normal Radiographs

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Case Report

Keywords: Foreign body aspiration, Chicken bone, Wheezing, Bronchoscopy, Pediatric airway

Posted Date: April 1st, 2026

DOI: https://doi.org/10.21203/rs.3.rs-9208459/v1

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Additional Declarations: No competing interests reported.

Abstract

Background

Foreign body aspiration (FBA) is a significant cause of morbidity and mortality in young children and may present with subtle or nonspecific respiratory symptoms.

Case Presentation

We report a case of a 2-year-old girl who presented following a choking episode while eating chicken. Initial and repeat chest radiographs were unremarkable. However, persistent bilateral rhonchi were noted on auscultation, with reduced air entry over the right lung. Due to high clinical suspicion, rigid bronchoscopy was performed under general anesthesia, revealing two fragments of chicken bone lodged in the right main bronchus. These were successfully removed. The patient recovered uneventfully and was discharged in stable condition.

Conclusion

This case highlights the importance of maintaining a high index of suspicion for foreign body aspiration in children, even when radiographic findings are normal. Early bronchoscopic intervention remains essential to prevent complications.

Background

Foreign body aspiration (FBA) is a common and potentially life-threatening condition in children, particularly those under five years of age[1,2]. Diagnosis can be challenging when symptoms are subtle and radiological findings are inconclusive[2,8]. Radiolucent foreign bodies, especially organic materials such as food particles, may not be visible [4,6] on standard chest radiographs, leading to delayed diagnosis and increased risk of complications[4]. This case uniquely demonstrates that bilateral findings and normal radiographs may obscure diagnosis, even following a witnessed choking episode.

Case Presentation

A 2-year-old previously healthy girl was referred to the Otorhinolaryngology clinic following a witnessed choking episode while eating chicken. According to her parents, the child developed sudden coughing during the meal, which partially resolved spontaneously. There was no history of cyanosis, apnea, or loss of consciousness. However, intermittent cough persisted over the following two weeks.

On presentation, the child was alert and not in respiratory distress. Vital signs were stable, with a respiratory rate of 26 breaths per minute, oxygen saturation of 98% on room air, heart rate of 110 beats per minute, and body temperature of 36.8°C. Physical examination revealed bilateral rhonchi on auscultation, more prominent over the right lung field. Air entry was slightly reduced on the right side. No stridor or retractions were observed.

Initial chest radiography performed at a primary care facility and repeated at our center showed no radiopaque foreign body (Fig. 3), hyperinflation, or atelectasis. Despite normal imaging, the persistent abnormal auscultatory findings and history of choking raised strong suspicion of foreign body aspiration.

The patient underwent examination under general anesthesia with direct laryngoscopy followed by rigid bronchoscopy using a pediatric ventilating bronchoscope. Intraoperatively, two fragments of chicken bone were identified lodged in the right main bronchus (Fig. 1). and were successfully removed using optical forceps (Fig. 2). Mild mucosal edema was noted at the site of impaction, without granulation tissue or purulent secretions.

The procedure was completed without complications. Postoperatively, the patient was monitored in the pediatric intensive care unit for 24 hours. She remained hemodynamically stable with normal oxygen saturation and no signs of respiratory distress. Intravenous antibiotics and corticosteroids were administered for 48 hours. The patient showed significant clinical improvement, and auscultation findings normalized. She was discharged on postoperative day three in stable condition with scheduled outpatient follow-up.

Discussion

Foreign body aspiration (FBA) remains a frequent yet often under-recognized cause of respiratory symptoms in young children, particularly when presentation is subacute and imaging is non-diagnostic[1,2]. This case underscores several diagnostic pitfalls that can delay recognition, even in the presence of a witnessed choking event.

First, **normal chest radiographs do not exclude FBA**, especially with radiolucent organic materials such as food particles. Up to 30% of children with confirmed airway foreign bodies may have normal plain radiographs[6]. In our patient, two separate radiographs failed to demonstrate abnormalities, which could have provided false reassurance and contributed to delay.

Second, while **unilateral findings are classically described**, this case demonstrates that **bilateral rhonchi can occur** due to partial obstruction, airway irritation, or secondary inflammatory changes[2,8]. The presence of bilateral findings may obscure localization and reduce clinical suspicion, particularly in primary care settings.

Third, this case highlights the risk of **delayed presentation despite a clear choking history**. Symptoms may transiently improve after the initial event, leading caregivers and clinicians to underestimate severity[2,8]. The persistence of cough over two weeks in our patient represents a critical warning sign that warranted further evaluation.

Rigid bronchoscopy remains the **gold standard for both diagnosis and management** in pediatric FBA, offering optimal airway control and direct visualization[6,7]. Early intervention is associated with reduced risk of complications, including atelectasis, recurrent pneumonia, bronchiectasis, and chronic lung

injury[4,8]. In this case, timely bronchoscopy enabled successful removal of the foreign body before the development of secondary complications.

Overall, this case reinforces that **clinical judgment should supersede radiographic findings** when suspicion for FBA persists. The combination of a choking episode, ongoing respiratory symptoms, and abnormal auscultation—even if bilateral—should prompt early referral for bronchoscopic evaluation.

Clinical Takeaway Box

When to Suspect Foreign Body Aspiration in Children:

- History of choking (even if symptoms initially improve)
- Persistent cough, wheeze, or abnormal auscultation
- Normal or inconclusive chest radiograph

Red Flags from This Case:

- Bilateral rhonchi instead of classic unilateral findings
- Repeated normal imaging despite ongoing symptoms
- Delay in presentation (> 1–2 weeks after choking episode)

Key Action Point

→ Do not rely on radiographs alone. If clinical suspicion remains high, **proceed to early bronchoscopy**.

Conclusion

A normal chest radiograph does not exclude foreign body aspiration in children. Persistent respiratory symptoms following a choking episode should prompt further evaluation. Early bronchoscopy is crucial in preventing complications and ensuring favorable outcomes.

Declarations

Ethics approval and consent to participate:

Not applicable.

Consent for publication:

Written informed consent was obtained from the patient's guardians.

Competing interests:

The authors declare that they have no competing interests.

Funding:

None.

Author Contribution

All authors contributed to the conception, management, and writing of the manuscript. All authors read and approved the final manuscript.

Acknowledgements:

Not applicable.

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Figures

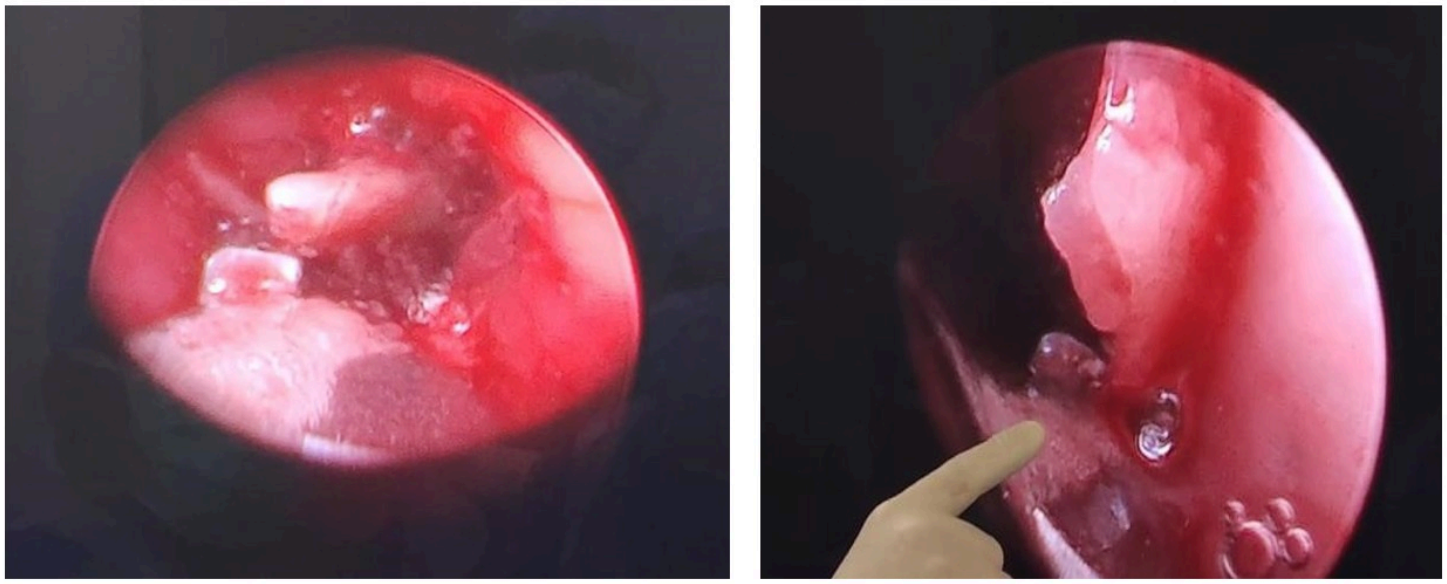


Figure 1

Endoscopic view during foreign body removal



Figure 2

Chicken bone post removal

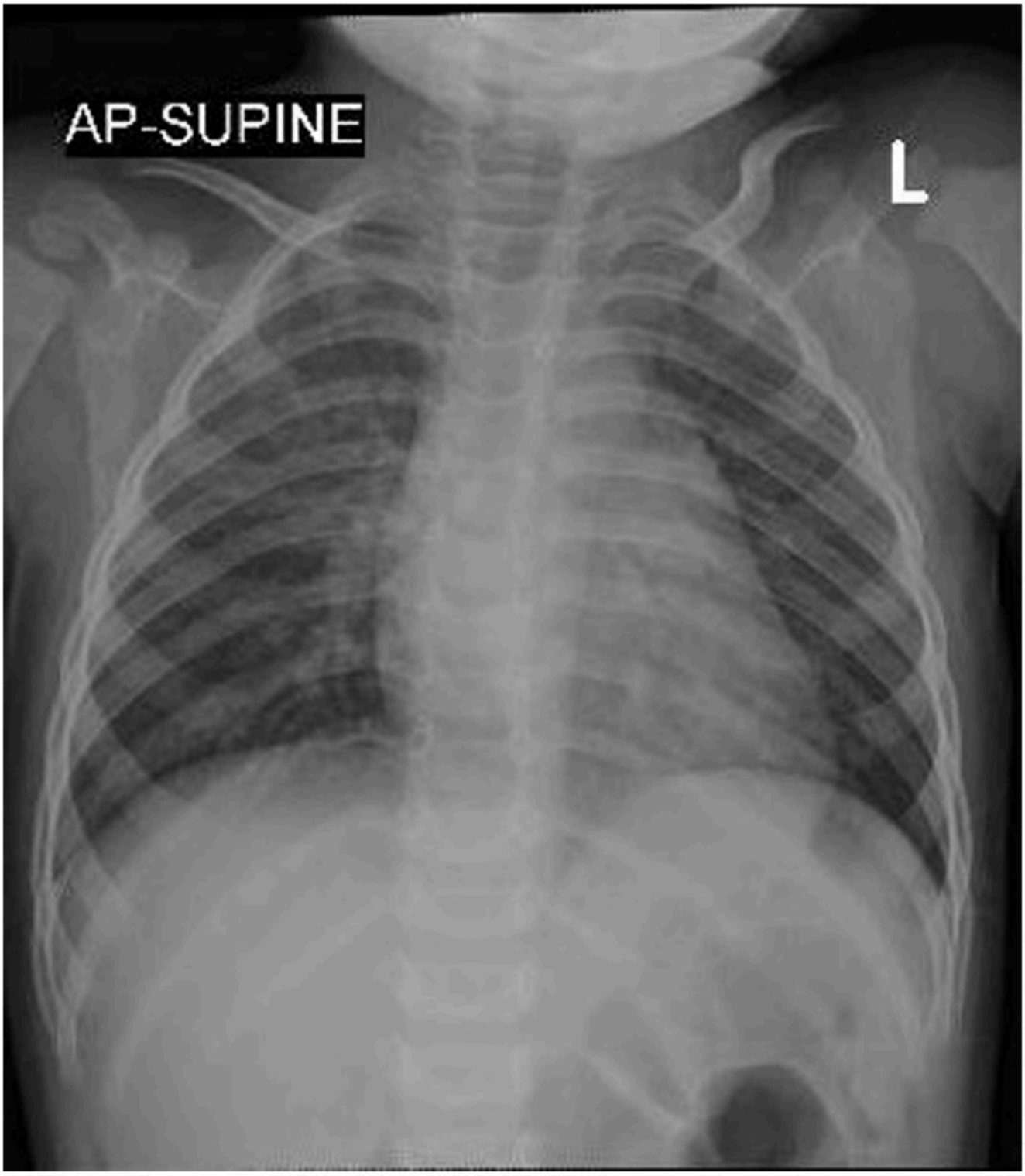


Figure 3

Normal chest radiograph performed at out center