Annals of Clinical and Medical Case Reports[R] ISSN 2639-8109 |Volume 16

Case Report Open Access

A Case of Tracheal Metallic Foreign Body in an Adult

Xue Zhihao[1] and Ma Peng[2*]

[1]North Sichuan Medical College Second Clinical Collage

[2]Department of Otolaryngology-Head and Neck Surgery, Beijing Anzhen Nanchong Hospital of Capital Medical University & Nanchong Central Hospital, Nanchong, Sichuan, 637000

***Corresponding author:**

Ma Peng,
Department of Otolaryngology-Head and Neck Surgery, Beijing Anzhen Nanchong Hospital of Capital Medical University & Nanchong Central Hospital, Nanchong, Sichuan, 637000

Received: 25 Feb 2026
Accepted: 01 Mar 2026
Published: 08 Mar 2026
J Short Name: ACMCR

Keywords:

Adult; Difficult Airway Foreign Body; Removal Surgery; Clinical Analysis

Citation:

Ma Peng, A Case of Tracheal Metallic Foreign Body in an Adult. Ann Clin Med Case Rep® 2026; V16(1): 1-3

1. Clinical Data

The patient, Mr. Yan, a 26-year-old male, was admitted to the emergency department on January 23, 2025, due to a "needle inserted into the neck after a fall 10 hours prior." Admission physical examination revealed slight redness and swelling of the local skin at the level of the cricoid cartilage in the midline of the neck, with no obvious tract or visible foreign body. An emergency cervical CT scan showed a strip-like dense shadow within the trachea (approximately at the lower edge of the C5 vertebral body), with a long diameter of about 25mm. Combined with the history, a foreign body was considered (Figure 1). Admission diagnoses were: 1. Tracheal foreign body; 2. Neck injury; 3. Cervical skin infection. Subsequent electronic bronchoscopy revealed: Normal epiglottis and vocal cords; a needle-like metallic foreign body was seen in the subglottic region, penetrating the airway from the anterior wall to the posterior wall. No active bleeding was observed, and the trachea was patent, but the scope could not be advanced further. Diagnosis: A metallic needle-like foreign body penetrating the anterior and posterior tracheal walls in the subglottic region (Figure 2). Simple bronchoscopic foreign body removal was deemed difficult, and surgical intervention was considered. After completing relevant preoperative examinations, the patient underwent tracheal foreign body removal under laryngeal mask airway general anesthesia. Surgical procedure: After successful intravenous composite anesthesia was achieved via laryngeal mask airway and the foreign body position was confirmed by fiberoptic bronchoscopy, routine disinfection, head draping, and skin preparation were performed. A transverse incision was made along a neck crease near the suspected foreign body entry point on the neck. The skin and subcutaneous tissue were incised, and the cervical platysma flap, anterior cervical strap muscles, and fascia were sequentially dissected to expose the cricothyroid membrane and cricoid cartilage as per the intraoperative findings. The laryngeal mask airway was removed, and a video laryngoscope was inserted. Using grasping forceps, the foreign body was grasped and pushed toward the anterior tracheal wall through the glottis. Simultaneously, the foreign body was palpated and retrieved using hemostatic forceps at the cricothyroid membrane. The laryngeal mask airway was reinserted and secured in place. The operative area was disinfected, a plasma drainage tube was inserted, and the skin and subcutaneous tissue were sutured in layers. Sterile dressings were applied, concluding the procedure. Intraoperative findings confirmed the needle-like metallic foreign body penetrating the subglottic airway from the anterior to the posterior wall. A pinpoint-sized opening was observed on the midline of the neck at the cricothyroid membrane, approximately 0.5cm above the upper border of the cricoid cartilage. The opening contained a pinpoint, dark brownish foreign body slightly recessed relative to the cricothyroid membrane plane (Figures 3, 4). The patient had no surgery-related complications post-foreign body removal and was discharged cured.

Figure 1.

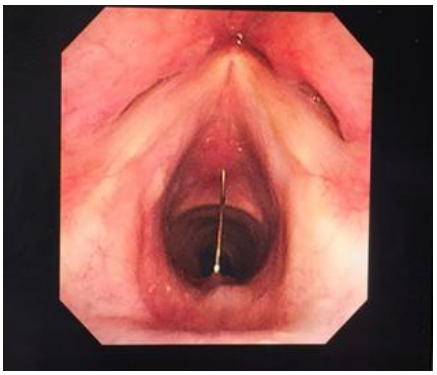

Figure 2.

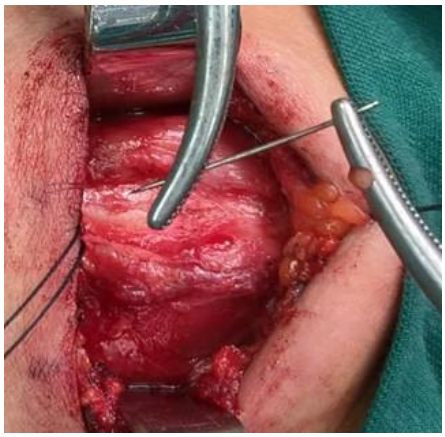

Figure 3.

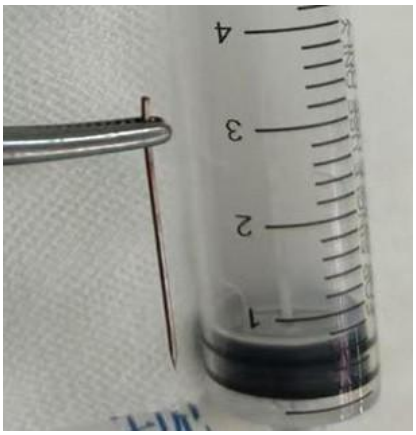

Figure 4.

2. Discussion

Tracheobronchial foreign bodies are a common emergency in otorhinolaryngology, often presenting critically. They occur more frequently in children under 5 years old and are occasionally seen in adults [1]. Normal adults have sensitive swallowing reflexes and strong cough reflexes, making tracheobronchial foreign body aspiration relatively rare. While inhaled foreign bodies are typically diagnosed early, some patients may be misdiagnosed with infections or asthma, leading to delayed diagnosis [2]. Adult patients often have predisposing risk factors for aspiration, which may include altered mental status, alcohol or drug intoxication, and neuromuscular weakness [3]. The geometry and chemical properties of the aspirated foreign body determine the clinical symptoms. Small, smooth-surfaced foreign bodies are often well-tolerated. Metals, especially steel, typically induce minimal reaction, whereas vegetable matter like peanuts and beans can provoke severe inflammation [4]. Clinical symptoms in adult patients with tracheal foreign bodies are often atypical, primarily presenting as cough; some may experience fever, chest pain, dyspnea, blood-streaked sputum, or hemoptysis [5]. Previous studies indicate that only 20.47% of patients present with a clear history of aspiration, while 65.50% present with atypical symptoms such as recurrent cough and expectoration alone [6]. The most common tracheobronchial foreign bodies are teeth (37.7%), followed by chicken bones (15.2%), nuts (14.5%), and fish bones (9.4%). With an aging population, the number of individuals undergoing dental procedures and the frequency of tracheobronchial foreign bodies may increase [7, 8]. The patient in this case had a clear history of the needle piercing the trachea. Due to the small size of the foreign body, airway obstruction was minimal, presenting only with pain at the neck entry point without symptoms like choking or dyspnea.

For diagnosing tracheobronchial foreign bodies, chest X-ray is a common, non-invasive investigation. However, its diagnostic value is limited as many low-density foreign bodies are not radiopaque. Chest CT can detect radiopaque foreign bodies in adults, with a detection rate nearly twice that of chest X-ray alone [9, 10]. Although imaging is very helpful, bronchoscopy remains the “gold standard” for diagnosing tracheobronchial foreign bodies [11]. Once detected via bronchoscopy, the foreign body must be removed promptly. In recent years, flexible bronchoscopic removal has become the first-line approach, and most adult cases can be managed safely under local anesthesia [12]. Surgical extraction is indicated for foreign bodies that are difficult to remove bronchoscopically or when there is a high risk of severe complications like massive hemorrhage or bronchial perforation during attempted bronchoscopic removal [13]. Needle-like metallic foreign bodies represent a special type of tracheal foreign body. The primary treatment choice is bronchoscopic removal, with surgery serving as an alternative when bronchoscopy fails. In the case series by Hicham Fenane, all patients with needle foreign bodies underwent surgical removal, with the approach depending on the foreign body’s location [14]. In this case, the needle-like metallic foreign body was lodged transversely across the subglottic airway, with no external tail visible on the skin surface. After an unsuccessful attempt at magnetic retrieval, surgery was considered. At this point, two anesthesia options were available: 1. Tracheotomy followed by intubation anesthesia. This offers better intraoperative airway management and can prevent distal migration of the foreign body, but it is more invasive and traumatic. 2. Foreign body removal under laryngeal mask airway general anesthesia. The pros and cons of this method are the opposite of the first. Considering the patient’s age and the characteristics of the foreign body, the surgical plan involved dissecting the cervical flap to expose the cricothyroid membrane, then simultaneously pushing the foreign body outward orally while retrieving it through the cricothyroid membrane.

Although the vast majority of airway foreign bodies are removed via bronchoscopy, the key to surgical management for bronchoscopically challenging foreign bodies lies in thorough preoperative evaluation, preparation, and selecting the most appropriate surgical approach based on the individual patient's condition. Flexible intraoperative management ensures the smooth progression of the surgery and garuntees patient safety.

References

1. Lan Q, Chen WH, Huang XH. Clinical analysis of 43 cases of adult tracheobronchial foreign bodies. Chinese Journal of Otorhinolaryngology-Skull Base Surgery. 2017; 23(02): 159-161.
2. Altuntas B, Aydın Y, Eroglu A. Foreign bodies in trachea: a 25-year experience. The Eurasian journal of medicine. 2016; 48(2): 119.
3. Bajaj D, Sachdeva A, Deepak D. Foreign body aspiration. J Thorac Dis. 2021; 13(8): 5159-5175.
4. Hemea d HM, Ramadan A, Gaafar AH, Nossier A, Abdelaziz A. Different Modalities Used in the Art of Managing Tracheobronchial Foreign Bodies. Open Respir Med J. 2022; 16: e187430642206100.
5. Wu YL, Zhou JR. Clinical analysis of 40 cases of adult tracheobronchial foreign bodies. Journal of Gannan Medical University. 2024; 44(04): 396-399.
6. Ma LSY, Li WP, Pan L. Retrospective analysis of diagnosis and treatment of tracheal and bronchial foreign bodies in 10 years. Chinese Journal of Lung Diseases (Electronic Edition). 2019; 12(03): 275-280.
7. Cossellu G, Farronato G, Carrassi A, Angiero F. Accidental aspiration of foreign bodies in dental practice: clinical management and prevention. Gerodontology. 2015; 32(3): 229-33.
8. Cameron SM, Whitlock WL, Tabor MS. Foreign body aspiration in dentistry: a review. The Journal of the American Dental Association. 1996; 127(8): 1224-9.
9. JANG G, SONG J W, KIM H J. Foreign-body aspiration into the lower airways in adults: a multicenter study. PLoS One. 2022;17(7): e0269493.
10. Sun ML, Wu BL. Value of clinical characteristics combined with multi-slice spiral CT three-dimensional reconstruction in the diagnosis of tracheobronchial foreign bodies in children. Journal of Clinical Pediatrics. 2016; 34(9): 677-679.
11. Hong LY, Luo M. Advances in diagnosis and treatment of adult tracheobronchial foreign bodies. West China Medical Journal. 2021; 36(04): 519-523.
12. Jiang DX, Wang HJ, Zhang XM. Discussion on methods for removing adult bronchial foreign bodies. Journal of Modern Clinical Medicine. 2018; 44(06): 417-419.
13. Tanahashi M. [Tracheobronchial Foreign Body]. Kyobu Geka. 2022; 75(10): 851-858.
14. Alaniz JA, Armstrong P, Bosley A, Mavratsas V, Reinertson R. Unexpected spontaneous expectoration of a grass bur: A case report. SAGE Open Med Case Rep. 2024; 12: 2050313X241274970.