LETTER

Flexible bronchoscopy: A safe and effective method to treat foreign body aspiration in adults

Dear Editor,

Foreign body (FB) aspiration (FBA) is an uncommon clinical condition in adults and could sometimes be life-threatening. A proper diagnostic and therapeutic approach is required, not only to avoid possible complications but also to minimize mortality[1]. We present four adult cases of successful FBA removal using flexible bronchoscopy (FLB).

A 52-year-old female with a 3-year history of cough, hoarseness, shortness of breath, intermittent hemoptysis, and chest pain underwent FLB that revealed a sizeable dental prosthesis in the right intermediate bronchus removed with the use of a basket (Figure 1A). A 70-year-old female with a subacute presentation of shortness of breath and dry cough underwent FLB, and we removed a plastic cup of a nasal inhaler device with biopsy forceps (Figure 1B). A 56-year-old male presented with a productive cough and underwent FLB, and we removed a piece of lamb bone with a basket (Figure 1C). The fourth case was a 76-year-old male admitted to the emergency department with acute craniocerebral trauma due to a mugger attack, and clinical and radiological investigations were indicative of denture aspiration (Figure 1D). FLB successfully removed the six-teeth aspirated prosthesis.

In adults, FBA-related death rate increases with age, peaking after 60 years of age[1]. Risk factors in adults include neurological impairment, intoxication, and medical procedures (emergency intubation or dental procedures)[1]. Most aspirated FBs are organic materials, such as food and bones, but can also be inorganic, with dental prostheses being the most frequently extracted inorganic object from adult airways[2], as the four presented cases.

The clinical presentation and severity of symptoms of FBA depend on the location, size, and nature of the foreign body. A relatively asymptomatic period follows the initial episode of sudden cough, dyspnea, or cyanosis, indicating that the FB passed to the lower respiratory system and lodged in the bronchial tree. The larger the FB, the more centrally it is lodged and the more severe symptoms are, with cough being the most prominent[1].

In suspected FBA, prompt radiologic evaluation is recommended. Chest x-ray has low sensitivity (60-85 %) and specificity (52-68 %)[3], while multidetector computed tomography with virtual bronchoscopy has sensitivity and specificity of almost 100 %. This noninvasive diagnostic modality can illustrate the tracheobronchial tree lumen and FB location and detect radiolucent FBs with similar to bronchoscopy accuracy. Also, it can detect parenchymal findings and allows optimal visualization of the distal to obstruction airway[3].

Management of FBs relies on endoscopy, and rigid bronchoscopy has long been the first choice to confirm the diagnosis and remove the FB, having the advantages of easy instrument passage and greater patient oxygenation. However, FLB is currently the preferred intervention as it is widely available, not requiring general anesthesia, and providing superior visualization of the bronchial tree with high success rate, up to 90 %[2].

FLB complications during the FB removal are uncommon and constitute hemorrhage, transient hypoxia, low-grade fever, and slippage of FB into the gastrointestinal tract[2]. This case series highlights that FLB could be an effective and minimally invasive alternative to rigid bronchoscopy.

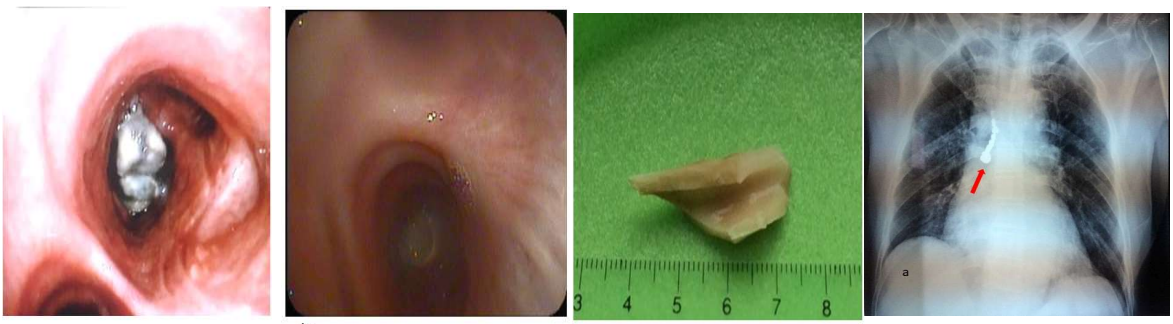

Figure 1: A, B) Endoscopic images of foreign bodies lodged in the bronchial tree, C) lamb bone removed from the third reported case, D) chest X-ray showing a radio-opaque aspirated foreign body (arrow).

Conflict of Interest
None.

References
1. Jang G, Song JW, Kim HJ, Kim EJ, Jang JG, Cha SI. Foreign-body aspiration into the lower airways in adults; multicenter study. PLoS One. 2022; 17: e0269493.
2. Sehgal IS, Dhooria S, Ram B, Singh N, Aggarwal AN, Gupta D, et al. Foreign Body Inhalation in the Adult Population: Experience of 25,998 Bronchoscopies and Systematic Review of the Literature. Respir Care. 2015; 60: 1438-1448.
3. Haliloglu M, Ciftci AO, Oto A, Gumus B, Tanyel FC, Senocak ME, et al. CT virtual bronchoscopy in the evaluation of children with suspected foreign body aspiration. Eur J Radiol. 2003; 48: 188-192.

Babalis G[1], Boutou A[2], Ampelidou V[3], Chloros D[1]

[1]Department of Respiratory Medicine, Papanikolaou Hospital
[2]Department of Respiratory Medicine, Hippokration Hospital
[3]Emergencies Department, Papageorgiou Hospital
Thessaloniki, Greece

Corresponding author: Afroditi K. Boutou, Department of Respiratory Medicine, Hippokratio Hospital, Thessaloniki, Greece,
e-mail: afboutou@yahoo.com