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Retrieval of a Very Large Foreign Body From the Bronchial Tree in an Intubated Patient



Recuperación de un cuerpo extraño de gran tamaño del árbol bronquial de un paciente intubado

Dear Editor:

Foreign body (FB) aspiration is a common problem in children and adults, necessitating prompt recognition and early treatment to minimize the potentially serious and sometimes fatal consequences.^{1,2} Consequences of an aspirated FB include the possibility of complete or partial airway obstruction, post-obstructive pneumonia, respiratory distress, pneumothorax or hemorrhage. Risk factors for FB aspiration include intellectual disability, neuromuscular diseases, maxillofacial trauma, unconsciousness, intoxication, dementia, and use of sedative drugs and dental medications.³

At present, FB removal in adults relies mainly on bronchoscopic techniques, including rigid and flexible bronchoscopy. A rigid bronchoscope provides greater access to the subglottic airways, ensuring correct oxygenation and easy passage of the telescope and grasping forceps during the extraction of a large FB. Furthermore, a rigid bronchoscope allows efficient airway suctioning if a massive bleed occurs.^{2,4} Flexible bronchoscopy offers several advantages compared with rigid bronchoscopy: first, it is more cost effective and easily applicable in an outpatient setting. Second, it avoids the need for anesthesia and deep sedation. Finally, it has been shown to be associated with lower mortality compared with rigid bronchoscopy (1% vs 12%), a difference which may be attributable to the avoidance of general anesthesia.^{5,6}

It is difficult to extract large FBs from the airway using a flexible bronchoscope, especially FBs such as dental prostheses. The irregular surface and hard composition of dental prostheses make them particularly difficult to grasp and extract using normally effective instruments (e.g. biopsy forceps, Fogarty balloon catheters, alligator forceps, or wire baskets). For this reason, practitioners commonly use a multidisciplinary approach or a combination of instruments. In this case report, we describe the successful removal of a very large dental prosthesis that nearly totally occluded the right main bronchus of a 72-year-old woman following a myocardial infarction.

A 72-year-old female patient was admitted to the hospital due to an anterior wall ST elevation myocardial infarction. She underwent a primary percutaneous coronary intervention with the insertion of a stent to her left anterior descending coronary artery. She was intubated due to severe pulmonary edema and then safely weaned

from mechanical ventilation seven days later. Ten hours after extubation, the patient suddenly developed dyspnea, tachypnea and severe hypoxemia. On physical examination, there were no signs of pulmonary edema, though decreased breathing sounds were noted on her right hemithorax. She underwent an immediate re-intubation, and an emergent chest X-ray revealed a large, fixed 7-unit restoration dental prosthesis nearly totally occluding the right main bronchus (Fig. 1).

Since the prosthesis was much wider than the 7.5-mm diameter of the endotracheal tube, we needed an innovative strategy for its extraction to avoid tracheotomy. A flexible bronchoscope was inserted through the endotracheal tube, after which the prosthesis could be seen in the right main bronchus. After a few attempts, the slippery prosthesis was finally grasped by large alligator forceps and the process of slowly withdrawing the scope began. When the prosthesis reached the distal end of the endotracheal tube, the complex of the tube, the bronchoscope and the grasped prosthesis were withdrawn until the prosthesis was brought to the level of the oropharynx. The prosthesis was extracted using Magill forceps together with the tube and bronchoscope. Immediately following the extraction, a new endotracheal tube was inserted.

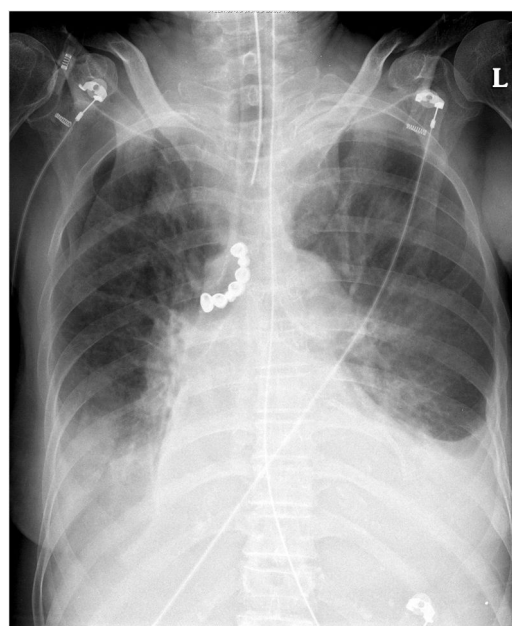


Fig. 1. Anterior–posterior chest X-ray demonstrating the radiopaque 7-unit dental prosthesis (arrow) in the patient's right main bronchus.