Fenestrated cup forceps use in removal of sharp airway foreign body

Sir,

A 21-year-old male student presented to us with a history of accidental aspiration of board pin [Figure 1a] while doing file work 12-h back. He had been having cough since then. On examination, he was comfortable at rest and vitals were stable. Pulse oximetry saturation at room air was 98%. A posteroanterior and lateral chest radiograph demonstrated a sharp foreign body (FB) in the right lower lobe bronchus [Figure 1b]. An initial attempt for flexible bronchoscopic removal using rat tooth forceps was planned. The patient was sedated using a combination of midazolam and fentanyl, and flexible bronchoscopy via oral route was performed. It demonstrated that the FB was present in the right lower lobe bronchus with its pointing end toward the bronchoscope and plastic blunt end causing complete occlusion [Figure 2a]. The

Figure 1: (a) The sample foreign body brought by the patient, (b) the chest radiograph demonstrating foreign body in right lower lobe bronchus
pointing end could not be grasped using rat tooth as well as alligator forceps due to its slippery nature. Subsequently, a fenestrated cup forceps (Pentax) was used. The pointed end of the FB was hooked inside the fenestration [Figure 2b] followed by the closure of cups [Figure 2c], which led to a better grip, and FB could be removed immediately. Postprocedure, the patient was stable and was discharged after an observation period of 4 h.

Airway FBs are more common in children as compared to adult population. In adults, it is mostly related to accidental aspiration of working tools (paper clips, scarf pins, nails, or board pins) and bone fragments or occurs during state of altered consciousness (trauma, sedation, intoxication, and seizures). The severity of symptoms depends on the degree of airway obstruction and can range from an asymptomatic patient to life-threatening asphyxia. Although rigid bronchoscopy is the gold standard for the removal of FB from the airways, in monitored conditions with a back-up of rigid bronchoscopy, flexible bronchoscopy can be safely and effectively used in the diagnosis and treatment of stable adult patients. Flexible bronchoscopy has been shown to reduce both time and cost in removing airway FB in adults.

The different types of accessories used to catch FB are rat tooth forceps, alligator forceps, magnet tip, and dormia basket. Depending on the shape and size of the FB, appropriate forceps needs to be used. Flexible cryoprobe is increasingly being used for hygroscopic FB removal. The problems faced during removal of sharp FB are injury to airways, damaging the bronchoscope channel, and slippage of FB to other segments. For these reasons, sharp FBs are commonly removed using rigid bronchoscopy under general anesthesia. The sharp FB poses a greater threat of slippage during removal and grasping the pointed ends is also difficult with common tooth or alligator forceps. The fenestrated cup forceps used in our case helped in providing a better grip of the sharp and smooth end reducing the above risk and successful removal could be done.

Declaration of patient consent
The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest
There are no conflicts of interest.

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REFERENCES
1. Baharloo F, Veyckemans F, Francis C, Biettlot MP, Rodenstein DO. Tracheobronchial foreign bodies: Presentation and management in children and adults. Chest 1999;115:1357-62.
2. Qureshi A, Behzadi A. Foreign-body aspiration in an adult. Can J Surg 2008;51:E69-70.
3. Rodrigues AJ, Oliveira EQ, Scondamaglio PR, Gregório MG, Jacomelli M, Figueiredo VR, et al. Flexible bronchoscopy as the first-choice method of removing foreign bodies from the airways of adults. J Bras Pneumol 2012;38:315-20.
4. Sehgal IS, Dhoooria S, Ram B, Singh N, Aggarwal AN, Gupta D.

Figure 2: (a) The foreign body lodged in the right lower lobe bronchus, (b) the tip of foreign body being hooked into the fenestration of the cup forceps, (c) the view of closed forceps with foreign body.
Foreign body inhalation in the adult population: Experience of 25,998 bronchoscopies and systematic review of the literature. Respir Care 2015;60:1438-48.

5. Schumann C, Kropf C, Rüdiger S, Wibmer T, Stoiber KM, Lepper PM. Removal of an aspirated foreign body with a flexible cryoprobe. Respir Care 2010;55:1097-9.

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