Impacted foreign body bronchus: Role of percussion in removal

Sir,

Foreign body (FB) aspiration is a life-threatening emergency, which requires prompt removal, but sometimes FB remains undetected. Most of the foreign bodies are organic in nature, the common ones being nuts and seeds in children and food and bones in adults.

A 10-year-old female child with a history of ingestion of tamarind seed 4 months ago, accompanied by transient cough was referred to our center. On examination, air entry was markedly reduced in the middle and lower zones of the right lung. Chest X-ray showed right sided consolidation. Computed tomography of the chest revealed soft-tissue lesion with surrounding air meniscus in right main bronchus with consolidation of the right middle lobe.

Patient was taken for elective bronchoscopic removal of FB under general anesthesia. Injection glycopyrrolate 0.004 mg/kg was given IV and oropharynx was sprayed with 4% of lignocaine spray. Then patient was induced with injection ketamine 2 mg/kg IV and injection Succinylcholine 2 mg/kg IV. Maintenance was achieved with intermittent Succinylcholine and halothane in 100% O₂. Ventilation was maintained with side port of the rigid bronchoscope. Only tiny fragments of the FB at a time could be removed. After about 20 min, the patient’s SpO₂ suddenly decreased due to slippage of FB into left main bronchus. After failure in maintaining saturation with bag and mask, intubation was done with 6 mm endotracheal tube. The air entry in the left lung was severely diminished. Repeat bronchoscopy was done. Many tiny fragments of FB were removed with a significant improvement in saturation. Expecting complete removal of FB, patient was re-intubated and ventilated and saturation maintained above 92%. Patient was shifted to intensive care unit (ICU) and was put on Ventilator. After 2 h, saturation fell down to 70%. Urgent chest X-ray revealed collapsed left lung. Patient was shifted back to operation theatre. Several failed attempts of bronchoscopic removal of FB were made. Patient was then placed in right lateral position and vigorous chest physiotherapy with percussion of the chest wall was given, following which a large piece of FB was removed from left main bronchus and saturation increased dramatically to 95%. Patient was re-intubated and shifted to ICU. Repeat chest X-ray showed bilateral clear lung fields. Patient was discharged from the hospital after 14 days with no neurological sequelae.

Bronchoscopy for removal of aspirated FB is an accepted gold standard. It can be performed under spontaneous or controlled respiration. We preferred controlled respiration as the FB was of organic nature and was expected to be swelled up due to fluid absorption. Owing to prolonged retention of FB, formation of granulation tissue as well as difficult extraction was anticipated.

Migratory FB has always posed unique danger of compromising healthy lung ventilation requiring urgent intervention. Like in our case, slippage of FB into uninvolved main bronchus made things worse. Intraoperative vigorous chest physiotherapy was an important maneuver performed in our case, which facilitated removal by dis-impaction of FB. Intraoperative postural drainage is another method facilitating FB removal.

We want to highlight that intraoperative percussion of the chest wall may be a useful additional intervention in certain situations to dislodge an impacted FB from the bronchial walls.
Sir,

Capnography monitoring is essential, especially in neurosurgical patients. Intraoperative kinking of gas sampling line needs immediate intervention which is difficult under the drapes. Even though many techniques have been described, none is failproof. [1] Here we report an indigenous method to prevent kinking of gas sampling line for sidestream capnography in head and neck surgery, especially in neurosurgery.

A 45-year-old female patient, case of tuberculum sellae meningioma, underwent bifrontal craniotomy and decompression under general anaesthesia. The breathing circuit of circle system was connected to the patient without heat moisture exchanger. The gas sampling line was connected via a three-way stop cock to the adapter in the breathing circuit [Figure 1]. The gas sampling line was parallel to the breathing circuit without any angulation. This was successfully used for 10 hrs of surgical procedure without any problem of kinking or obstruction.

The position of the gas sampling line is crucial as the vertical position can cause kinking and obstruction. This could be due to the compression either by the weight of the drapes and surgical equipment such as suction tubings, drill, cautery, or pressure from the assistant’s hands. The incidence of this complication might increase with the prolonged surgical procedure. Young et al. [2] suggested a simple technique by changing the angle by making a loop of gas sampling line. But again, it could not prevent the sideways lateral kinking of the gas sampling line. If the gas sampling line is in dependent position, then the condensed water droplets or patients secretions could enter the gas sampling line by gravity resulting in obstruction to gas flow. [3] Most of the anesthesiologist would prefer to keep the gas sampling line facing laterally to avoid both these complications. While this prevents kinking, there is risk of entrainment of water droplets because of the horizontal position.

Access this article online

| Quick response code | Website: www.ijaweb.org |
|---------------------|--------------------------|
| ![QR Code](image)   | DOI: 10.4103/0019-5049.123349 |

References

1. Bist SS, Varshney S, Kumar R, Saxena RK. Neglected bronchial foreign body in an adult. JK Sci 2006;8:222-4.
2. Lerra S, Raj R, Aggarwal S, Saini VK, Nagarkar NM. A long standing foreign body in bronchus in an adult. A diagnostic dilemma. JK Sci 2011;13:27-8.
3. Singhal P, Sonkhy N, Srivastava SP. Migrating foreign body in the bronchus. Int J Pediatr Otorhinolaryngol 2003;67:1123-6.
4. Sayuti R, Fadzil A, Ahmad R. Impacted foreign body in secondary bronchus: Chest percussions during therapeutic bronchoscopy. Int J Pediatr Otorhinolaryngol Extra 2009;4:75-6.
5. Cotton EK, Abrams G, Vanhoutte J, Burrington J. Removal of aspirated foreign bodies by inhalation and postural drainage. A survey of 24 cases. Clin Pediatr (Phila) 1973;12:270-6.