

## Anesthetic management of a 18 month old child for rigid bronchoscopy- A difficult case scenario

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### ABSTRACT

Anesthetic management of a child posted for removal of foreign body from bronchus is a nightmare to the anesthesiologist. Generally it is seen in pediatric age group which is associated with its own set of complications along with the acute nature of the problem makes the scenario worse. We present a case of foreign body

removal in 18 months old baby, which developed postoperative stridor secondary to multiple manipulation leading to laryngeal edema. The management of this devastating complication has been described in the present case.

**Key words:** Rigid bronchoscopy, Laryngeal edema

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### INTRODUCTION

Pediatric patient poses a challenge to the anesthesiologist. Moreover, when pediatric patients were posted for foreign body bronchus surgery, the scenario gets worse. We present a case report of a 18 month old child for foreign body bronchus removal.

### CASE REPORT

A 18 month old female (11kgs) child admitted in our hospital with acute onset of dyspnoea and cough. There was history of foreign body aspiration in the form of peanut. On admission, the baby was conscious and afebrile. The pulse rate was 140/minute. Blood pressure was 80/42 mm Hg in the right arm with noninvasive blood pressure measurement. She was having tachypnea with a respiratory rate of 55/minute. Pulse oxymeter showed oxygen saturation of 95 % on air. There was no cyanosis. On auscultation, air entry was reduced to right side of chest. The cardiovascular system examination was normal. Chest X-ray showed collapse on right side. The rest of the investigations were within normal limits. The patient was nil by mouth since last 4 hours. It was decided to take the case for rigid bronchoscopy for foreign body removal. The patient was accepted for anesthesia ASA 1 E case as an emergency.

On table, 22 gauge intravenous cannula was kept in left arm. Intravenous fluid started with isolyte-p. All routine monitoring, system was applied, which included pulse oxymetry, electrocardiography and noninvasive blood pressure monitoring. All preparations for difficult intubation were kept ready including laryngeal mask airway (LMA), small sized tubes and pediatric stylets. Injection glycopyrolate 10 mcg/kg was given. Injection midazolam 0.02 mg/kg was given. The patient was preoxygenated for 5 minutes with 100% oxygen. The patient was sedated with injection propofol 2mg/kg and bag mask ventilation was confirmed. After that injection succinyl choline 20 mg intravenous was given. Once the baby is fully paralyzed, patient was handed over to the surgeon for rigid bronchoscopy.

The surgeon did a rigid bronchoscopy for 90 seconds during which he could not locate and capture a foreign body in the right bronchus in first attempt. We started ventilation when oxygen saturation fell down to 70%. Another attempt was made when oxygen saturation increased to 100%. Even in second attempt foreign body could not be located and the patient was again ventilated at oxygen saturation of 70%. Injection succinyl choline 5 mg intravenously given as top up. During the third

attempt, the surgeon was able to locate and remove foreign body, which was a peanut piece situated in the right main stem bronchus. Immediately after removal of foreign body, the patient developed stridor. Check bronchoscopy was performed to rule out any remnant of foreign body and no evidence of foreign body was found. So the patient was immediately intubated with 4 number uncuffed endotracheal tube. The patient was given injection hydrocortisone 50 mg intravenously followed by injection dexamethasone 1 mg. The patient was kept on the pressure control mode of ventilation with a view of airway edema under steroid cover for the next 12 hours in propped up position. The patient was extubated after 12 hours in neonatal intensive-care unit (NICU) without any stridor with normal vitals. The patient was kept under observation for another 24 hours and was discharged. The patient was well at the time of discharge.

### DISCUSSION

Rigid bronchoscopy for retrieval of foreign bodies is a fairly common procedure in pediatric age group, though it is a very challenging case scenario. Complications include bleeding, laryngeal trauma, laryngeal edema, laryngospasm, bronchospasm, infection, hypoxemia, tracheobronchial laceration and pneumothorax.<sup>1,2</sup> Repeated manipulation of the tracheobronchial tree caused laryngeal edema, which presented as stridor in the immediate postoperative period. The most serious complications of laryngeal edema<sup>3</sup> is complete airway obstruction, hypoxia, and death. Immediate diagnosis is imperative and prompt treatment is mandatory. Initial supportive treatment includes oxygen supplementation, racemic epinephrine nebulization.<sup>4</sup> In unstable patients, definitive airway management is required which includes positive pressure ventilation and endotracheal intubation.<sup>5,6</sup> In our case, the patient immediately presented with stridor. We ventilated the patient with a mask and endotracheal intubation was done and the patient kept on positive pressure ventilation along with steroid coverage (hydrocortisone 2 mg/kg two times a day intravenously) to reduce airway edema.

### CONCLUSION

Rapid diagnosis and immediate measures to reduce hypoxia (ventilation) are the keys of successful management of postoperative stridor in a child.

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