
Can intubate but cannot ventilate! An unexpected event in a child with stridor after accidental aspiration of the potassium permanganate solution

Sir,

We present a unique case of iatrogenic aspiration of potassium permanganate (KMnO₄) lavage in a 3-year-old child (weight-13 kg). The child presented to the emergency department with an alleged history of lice killer poisoning (composition and quantity were not known), 8 h after ingestion. Although, gastric lavage is not indicated for routine use in the management of poisonings after one h,^[1] the child was made to ingest KMnO₄ (1:5000) by a local practitioner without proper precautions. The child aspirated it and was brought to our center. Birth, developmental, and immunization history were normal. On examination, the child was tachypneic (40–45 breaths/min). The heart rate (HR) was 180/min and oxygen saturation (SpO₂) was 88% on room air. On auscultation, wheeze was heard all over the chest. An intravenous line (IV) was secured and the patient could breathe from a nonrebreathing mask with 10 L/min oxygen flow. IV dexamethasone 2 mg and adrenaline nebulization were given. This improved the SpO₂ to 100% and his ABG was: pH-7.46, pCO₂-27.1 mmHg, PO₂-58.9 mmHg,

Hb-10.1 gm/dL, HCO₃⁻-19.5 mmol/L, BE- -4.5 mmol/L, SO₂%- 92.1%, Na⁺ - 140.3 mmol/L, K⁺- 3.63 mmol/L, lactate- 1.1 mmol/L. Chest X-ray anterior-posterior was normal. As the child was showing signs of respiratory distress and was drowsy, we decided to secure the airway.

The child was shifted to the operating room (OR). Difficult airway cart was arranged and electrocardiography (ECG), pulse oximetry, and noninvasive blood pressure (NIBP) were attached. We planned to perform a direct laryngoscopy to examine the vocal cords and decide on the plan for securing the airway. IV propofol 4 mg/kg was used for induction. After confirming the lack of response to jaw thrust, direct laryngoscopy was performed with McIntosh blade 2. Vocal cords were stained and edematous but the glottic opening was visible. The trachea was intubated with size 4 uncuffed endotracheal tube (ETT) after oral suction. Successful intubation was confirmed with capnograph and chest auscultation. One minute after intubation, there was no capnograph and no air entry on auscultation. The SpO₂ dropped to 60% and HR to 80/min. Direct laryngoscopy was



Figure 1: Debris (2) in the right lobar bronchus (1) on flexible bronchoscopy

performed by a senior anesthesiologist to reconfirm the ETT position. Otorhinolaryngology team was alerted for emergency tracheostomy. The ETT was removed which did not show any blockage. The child was mask ventilated with 100% FiO₂ but there was no ventilation. As the SpO₂ dropped to 55% and HR decreased to 70/min, IV adrenaline 200µg was administered. Surgical tracheostomy was performed but in vain. Tracheal suction was performed through the tracheostomy tube (4 mm cuffed) but failed. Tracheal suction was repeated with instillation of 3 mL normal saline. Ventilation was established and vitals improved. To know the cause and status of the tracheobronchial tree, flexible bronchoscopy was performed. This revealed dislodged debris in the right and left lobar bronchi [Figure 1 and Video 1]. The child was shifted to the intensive care unit. Spontaneous ventilation was encouraged, to avoid dislodgement of the debris to distal airways. Chest physiotherapy and suctioning were advised with supportive care (analgesia, antibiotics, and nebulization with mucolytics and bronchodilators). The child was weaned-off from the ventilator later.

In this case, the complication after successful intubation was unexpected. It was suspected that the dislodged debris of necrotic epithelium blocked the tracheobronchial tree, as the ETT showed no blockage. We were not able to ventilate the child even after tracheostomy. As the airway showed minimal necrotic changes, the child might have aspirated the debris from the gastrointestinal tract into the tracheobronchial tree. Positive pressure ventilation after placement of ETT might have displaced it further leading to obstruction of the lower airway. Adequate suctioning of the trachea with normal saline disintegrated the debris and facilitated ventilation. The cause beyond the glottis (blockage or collapse of the trachea) needs to be evaluated if the trachea can be intubated but lungs cannot be ventilated.

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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