

## Endotracheal tube connector defect causing airway obstruction in a child

Sir,

Airway obstruction occurring under general anaesthesia (GA) can prove to be a fatal event, especially in paediatric patients. If successful intubation is followed by difficulty in ventilating the patient, certain conditions such as acute bronchospasm, tension pneumothorax, endobronchial mass lesion, poor pulmonary compliance, kinking and defects of endotracheal tube (ETT) and anaesthesia delivery system malfunction should be ruled out.<sup>[1,2]</sup> Manufacturing defects of the ETT may remain unnoticed during routine inspection<sup>[3,4]</sup> as occurred in this case and that led into partial obstruction of airway.<sup>[5]</sup>

A 3-year-old, 10 kg child, American Society of Anesthesiologists (ASA) physical status Grade 1, posted for percutaneous cystolithotripsy was scheduled for surgery under GA. After pre-oxygenation, anaesthesia was induced using injection propofol 20 mg and injection atracurium 10 mg intravenous (for paralysis). Bag and mask ventilation was performed with Jackson Rees (JR) circuit and trachea intubated with pre-sterile polyvinyl chloride (PVC) uncuffed ETT with internal diameter 4.5 mm. The tube was fixed at 13 cm mark from bevel tip and connected to JR circuit. When ventilation was attempted, resistance was felt. Bilateral chest rise was poor and air entry was reduced on auscultation. There was difficulty in ventilation with the bag, and the bag felt "tight", and end-tidal CO<sub>2</sub> was increasing. ETT marking was checked at the level of incisor and the tube was manipulated for correct placement and to rule out impingement of tip of ETT on tracheal wall. Still, ventilation did not improve. All connections were checked and were found alright. Finally, we tried to pass a 10 F size suction catheter through the



**Figure 1:** Partial obstructed endotracheal tube connector



**Figure 2:** Defective connector with endotracheal tube

ETT tube across the connector to suck out secretions that could be causing the increased airway resistance. However, the suction catheter could not be passed across the connector; on examination, we found that a thin membranous layer was the culprit, making the orifice of ETT narrow [Figures 1 and 2], which had been missed on routine examination. This connector was replaced with another connector of the same size, the circuit was reconnected and ventilation improved. Surgical procedure was accomplished without any complication with smooth recovery of the patient.

After the case, the whole set of Sterimed® PVC ETTs were checked and no defects were found in any of them. The concerned authorities were informed about the tube defect, but the response is awaited. In the present case, other causes of airway obstruction except ETT-related defects were ruled out because we were able to ventilate the patient with bag and mask without resistance later on. Both the ends of connector should be examined (tube end and machine end) along with the ETT.

#### 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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