

Manufacturing defect in an endotracheal tube connector: risk of foreign body aspiration

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To the editor: Routine inspection and testing of endotracheal tubes (ETTs) prior to use may fail to identify certain manufacturing defects [1]. We would like to discuss the potential morbid complication of foreign body aspiration associated with a manufacturing defect in the tip of an ETT connector.

A 28-year-old woman was scheduled for laparoscopic ovarian cystectomy. Induction of anesthesia was performed with 2 mg·kg⁻¹ propofol, 0.1 mg fentanyl, and 0.1 mg·kg⁻¹ vecuronium bromide i.v. Tracheal intubation was achieved with a size 7.5-mm ETT (Well Lead Medical Instruments, Jinhu Industrial Estate Hualong, Panyu Guangzhou, P. R. China). Chest auscultation revealed clear, bilaterally equal breath sounds. The lungs were ventilated at 6 l·min⁻¹ and 17-mmHg peak airway pressure. While we were fixing the ETT with tape, a moving particle was noticed in the lumen of the ETT. The ETT was immediately disconnected from the ventilator, and a tiny particle was noted in the distal part of the tube connector (Fig. 1). The connector was changed immediately and ventilation was maintained with no problem during the operation. Inspection of the connector revealed that the presence of the particle was caused by a manufacturing defect. Neither atelectasis nor a foreign body was seen on chest radiograph taken at the end of the operation. The postoperative course was uneventful. Problems associated with an ETT defect, if not corrected immediately, would lead to failure in ventilating the lungs, hypoxemia, and serious complications [2,3]. It is recommended that the use of transparent tubes and a pre-use check might allow visualization of the lumen and hence prevent problems [3]. However, some problems may still occur even with high-quality, pre-packed single-use transparent plastic ETTs [3].

In our patient, the foreign body moved with ventilation, and then it could be seen only in the lumen of the tube. If it had not been noticed, a possible problem would have been the inward migration of the particle, possibly leading to serious complications. There has been no previous report of this type of structural defect in an ETT. We suggest that an internal visual check of the lumen should be performed routinely, because the opaque nature of the connector makes visual

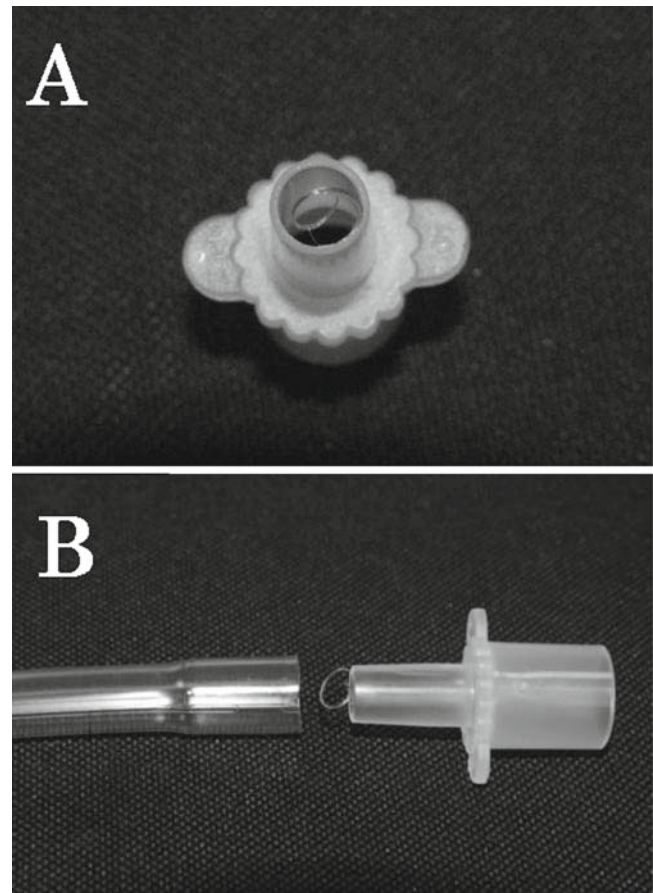


Fig. 1. **A** Tiny particle in the distal part of an endotracheal tube connector. **B** The foreign body moved with ventilation, and then it could be seen in the lumen of the tube

identification of debris difficult when the connector is examined only externally. Our case highlights not only the importance of double checking ETTs, including the connector, before usage but also the need for vigilance on the part of the anesthesiologist for the early detection of such structural defects.

References

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