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Medical Image

Transection of Flexometallic Endotracheal Tube During Le Fort's Osteotomy

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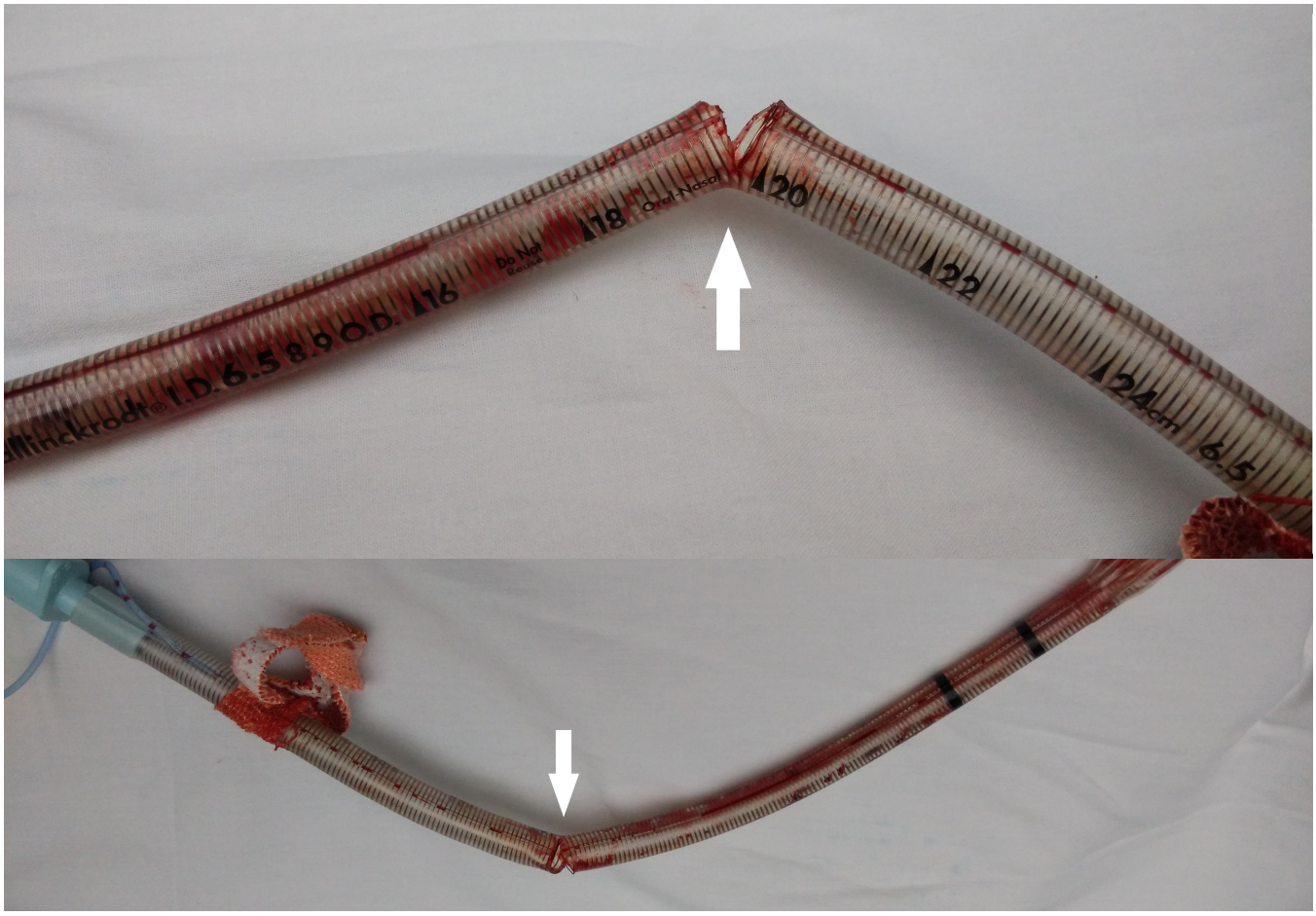

Figure. A Partially Transected Flexometallic ETT After Maxillary Osteotomy.
The arrow mark is showing the point of transection.

Maxillofacial surgeries are quite challenging for the anesthesiologists as they share the airway with the surgeons. During such surgeries, the transnasal armoured or a flexometallic endotracheal tube (ETT) can get damaged due to cuff rupture, tube transection (partial or complete). This can be identified by presence of gas bubbles in surgical field, inability to deliver set tidal volume, inability to inflate ETT cuff, sudden fall in end tidal carbon dioxide, desaturation and low minute volume ventilation alarm (1).

We anesthetised an 18-year-old boy weighing 45 kg belonging to American Society of Anesthesiologists physical status I with Mallampatti- 1 airway having grade 3 cleft with maxillary retrusion for a Le fort I maxillary osteotomy. After confirming nil by mouth status we shifted the patient to operation room and induced general anesthesia with 1 mg midazolam, 100 μg fentanyl , 120 mg propofol and 25 mg atracurium intravenously. Intraoperatively we monitored oxygen saturation, lead II and V5 , non-invasive blood pressure and end-tidal carbon dioxide after intubating with 6.5 mm cuffed flexometallic ETT. Intraoperatively there was failure to deliver set tidal volume, low minute ventilation alarm and bubbling in surgical field which alerted us. Suspecting ETT transection, we interrupted the surgery and changed the ETT over gum elastic bougie uneventfully (Figure shows transected flexometallic tube). The patient was extubated uneventfully and discharged from the hospital on 3rd postoperative day.

Anesthesiologists should have high index of suspicion during such surgeries. Whenever there is bubbling in surgical field, failure to deliver the preset tidal volume or minute ventilation volume and intraoperative desaturation during such surgeries, the anesthesiologists should always investigate the cause. Whenever in doubt, surgery should be interrupted to identify and troubleshoot the problem. Putting the head in neutral position and interrupting the surgery temporarily facilitates ventilation temporarily (2). Surgery should not be continued in sub-optimal conditions which can lead to micro-aspiration of oropharyngeal secretions leading to postoperative pulmonary complications (3). The surgeons will struggle to perform maxillofacial surgery in neutral position. Orotracheal intubation is difficult due to ongoing surgery which makes laryngoscopy difficult leading to aspiration and hypoxia. Patients undergoing these surgeries could have difficult airways due to anatomical abnormalities and indications like Crouzon' s syndrome (4). The difficult airway cart should be rushed to the scene in all situations.

The surgical team should be ready for a surgical tracheostomy or a cricothyrotomy in case required. Gadgets like fiberoptic bronchoscope, video laryngoscope, jet ventilator can be used depending on the situation and expertise (5). The damaged tube can be exchanged over a gum elastic bougie or a tube exchanger. Reintubation could be difficult due to bleeding, secretions, air bubbles and difficulty in removing the damaged ETT through the nostril.

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