

# Temporomandibular Joint Dislocation following Endotracheal Tube Manipulation: A Near Miss!

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Temporomandibular joint (TMJ) dislocation is a painful condition that occurs when there is an undue forward movement of the condyle ahead of the articular eminence with total separation of the articular surfaces and fixation in same position.

A 63-year-old female patient presented with diminished sensation over both lower limbs and inability to walk for the last 2 months. Her magnetic resonance imaging (MRI) study showed C6 to C7 vertebral body destruction with prolapsed D7 vertebral body. She was posted for anterior cervical dissection and fusion at C6 to C7 level for which auto graft bone was taken from iliac crest under general anesthesia. Her pre-anesthetic check-up was unremarkable. Her mouth opening was more than three fingerbreadths, and modified Mallampati score was 2. After attaching routine monitors, general anesthesia was induced with fentanyl 100 µg, propofol 100 mg, and rocuronium 50 mg. Trachea was intubated successfully with the help of video laryngoscope (KARL STORZ-ENDOSCOPE C-MAC 8401 ZX, Tuttlingen, Germany). After intubation, the jaw was in normal position. While shifting the tube to fix on the left side using gloved fingers with video laryngoscope in situ, we noticed that there was deviation of mouth toward the right side, and we were not able to close her mouth. Left-sided TMJ dislocation was suspected, and manual reduction of dislocation was tried before a consultation was sent to dental surgeon. TMJ dislocation was corrected via intraoral route by dental surgeon after two attempts. He put the thumb over the molar teeth of the patient and pushed the dislocated jaw downward and backward. After jaw correction, surgery was resumed and was completed with uneventful intraoperative course.

Factors commonly associated with TMJ dislocation are poor development of the articular fossa, temporomandibular ligament or joint capsule laxity, excessive activity of the lateral pterygoid and infrahyoid muscles, female gender, lesser

inter-incisor distance, previous TMJ pain, and increasing age.<sup>1</sup> TMJ loses some of the protection provided by tone of surrounding muscles due to rotation and translation of the joint during direct laryngoscopy and jaw protrusion during mask ventilation in anesthetized patient. This can lead to joint dysfunction following uncomplicated direct laryngoscopy and endotracheal intubation in normal individuals especially in old age and female patients. TMJ dislocation can be easily missed in an anesthetized patient, and late reduction (over a period of months) of the same can lead to joint fibrosis, adhesion, and difficult manual reduction necessitating surgical reduction.<sup>2</sup> The American Society of Anesthesiologists recommends preoperative evaluation of TMJ function especially with regard to limitations in the range of motion of the TMJ and the ability to protrude the mandible voluntarily.<sup>3</sup> Further evaluation and treatment by dentist are needed in a patient with a history or signs of TMJ disorder before any airway management.

Temporomandibular joint dislocations have been reported after laryngeal mask airway insertion,<sup>4</sup> endotracheal intubation,<sup>5</sup> gastrointestinal endoscopy, transesophageal echography probe insertion, and after tracheal extubation. In our case, dislocation occurred during shifting of tube from the right to the left side of the mouth. The possible reason may be extra opening of mouth, laxity of ligaments due to old age, and loss of protective reflex of muscles surrounding TMJ due to administration of muscle relaxant.

If TMJ dislocation goes undetected, in postoperative period, the patient can have pain in face and jaw, difficulty in closing mouth, problem in talking, drooling of saliva, etc. We recommend gentle manipulation of airway and timely diagnosis of TMJ dislocation in older female patients under general anesthesia. Anesthesiologist should be trained in detecting and repositioning of TMJ dislocation. Our case is a reminder of this painful complication following airway manipulation.

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