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Case Report

Progressive mandibular midline deviation after difficult tracheal intubation

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Summary

We report condylar resorption of the temporomandibular joint after difficult intubation, leading to progressive midline mandibular deviation, subsequently treated by prosthetic joint replacement.

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Forces applied during difficult tracheal intubations can cause oedema, bleeding, tracheal and oesophageal perforation, pneumothorax or aspiration. Resorption of the temporomandibular joint has not been associated with tracheal intubation.

Case Report

Urgent laparotomy was deemed necessary in a 52-year-old woman due to rapid clinical deterioration and suspected anastomotic leak of a Roux-en-Y gastric bypass. Pre-operative examination demonstrated painless interincisal opening of 4.5 cm without mandibular deviation, a thyromental distance of 6.5 cm, and a Mallampati score of 2. A previous laryngeal view (Cormack-Lehane grade 1) and orotracheal intubation had been uneventful. She was treated for hypertension, hypothyroidism and anxiety-depressive disorder. She had no record of temporomandibular joint pain or malfunction.

Following induction of anaesthesia and neuromuscular blockade, laryngoscopy with a Macintosh blade (size 3) permitted revealed a poor laryngeal view (Cormack-Lehane score 2–3) and there were three unsuccessful tracheal intubation attempts. Intubation with a tube reinforced by a stylet was achieved after changing to a Miller (size 2) laryngoscope blade.

The patient complained of right temporomandibular joint pain from the first postoperative day, followed by progressive chin displacement and malocclusion. Four months later, physical examination revealed marked deviation of the mandible to the right with severe malocclusion, right cross bite and left scissor's bite (Fig. 1). Magnetic resonance imaging showed extensive condylar resorption and diminished right temporomandibular joint space without significant findings on the left. Similar findings without apparent fracture lines were reported on CT scan. No rheumatological conditions were reported upon specialised

Figure 1 Deviation of the mandible to the right and malocclusion, with right cross bite and left scissor's bite.

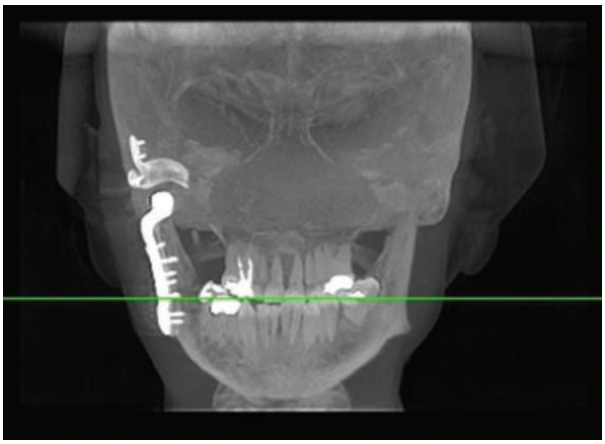

Figure 2 Postoperative CT scan showing patient-fitted prosthetic temporomandibular joint replacement with adequate midline dental alignment and canting reduction.

consultation. Intra-articular triamcinolone acetonide injection reduced pain a little. After thorough 3D reconstruction and planning, the diseased joint was replaced with a prosthesis (Fig. 2).

Discussion

The ASA Task Force defines difficult tracheal intubation as when a conventionally-trained anaesthetist experiences difficulty with facemask ventilation of the upper airway, difficulty with tracheal intubation, or both [1]. Reported complications following difficult tracheal intubation include oedema, bleeding, tracheal and oesophageal perforation, pneumothorax and aspiration [1]. The rate of dental injuries following tracheal intubation is approximately 1:4500 [2]. To our knowledge, there are no previous reports on progressive condylar resorption, chin deviation and malocclusion.

'Idiopathic condylar resorption' is a progressive decrease in condylar mass and change in shape, which occurs most frequently in women between 15 and 35 years of age [3, 4]. Factors associated with an increased incidence of condylar resorption include infectious, autoimmune, endocrine and cardiovascular diseases, nutritional and metabolic disorders, and trauma [5–10]. Our patient had nutritional and endocrine disorders associated with obesity, as well as trauma during four intubation attempts. Of these three factors, forceful laryngoscopy might best explain the immediate postoperative pain and progressive mandibular deviation.

Idiopathic condylar resorption should be considered in patients suffering severe temporomandibular joint pain, malocclusion and mandibular midline deviation following forced laryngoscopy or other manoeuvres. Computed tomography or magnetic resonance imaging can confirm the diagnosis, with consultation and treatment by a maxillofacial specialist. Customised prosthetic replacement of the joint is a treatment option that can restore both function and aesthetics [11].

Acknowledgements

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