

# Iatrogenic Dislocation of the Temporomandibular Joint due to General Anaesthesia

Munir Alam

[mrmuniralam@gmail.com](mailto:mrmuniralam@gmail.com)

King Abdullah Hospital

---

## Case Report

**Keywords:** Incidence, Temporomandibular joint, Aetiology, Case report

**Posted Date:** March 25th, 2024

**DOI:** <https://doi.org/10.21203/rs.3.rs-4113998/v3>

**License:**  This work is licensed under a Creative Commons Attribution 4.0 International License.

[Read Full License](#)

## Additional Declarations:

The authors declare no competing interests.

Consent for publication: Written informed consent was obtained from the patient for publication of this case report and any accompanying images.

---

# **Iatrogenic Dislocation of the Temporomandibular Joint due to General Anaesthesia**

## **(CASE REPORT)**

**Author: Prof Munir Alam**

Professor of Surgery, College of Medicine, University of Bisha, Saudi Arabia.

Consultant Plastic Surgeon, King Abdullah Hospital, Bisha, Saudi Arabia.

### **ABSTRACT:**

**Background:** The temporomandibular joint (TMJ) is a modified hinge joint with the condyle of the mandible resting in a shallow glenoid fossa, predisposing it to be easily dislocated without extreme force. Anterior dislocation of TMJ is the most common type of dislocation. It can occur due to excessive opening of the mouth, trauma, or seizures. Iatrogenic cases of TMJ dislocation have been reported with 5% incidence during anaesthesia induction, intubation, and upper endoscopic procedures and surgical procedure performed on remote areas of the body (1,2). However, it has not been reported while the surgeon working around the head & neck area. In this case report while the surgeon operating on face, the dislocation of TMJ was missed or not identified in the immediate post operative period.

**Case Presentation:** This is a case report of 23 years old female in which post-intubation complication of TMJ dislocation occurred while the patient had facial surgery.

**Conclusion:** Early diagnosis of iatrogenic TMJ dislocation is required to prevent delays in treatment, whether the surgery in the head & neck region or remote area.

**Key Words:** Incidence, Temporomandibular joint, Aetiology, Case report

## **INTRODUCTION:**

Anterior temporomandibular joint dislocation is not an uncommon occurrence and has been reported before. The incidence of TMJ dysfunction following endotracheal intubation/extubation is reported to be 5% (1,2). However, its diagnosis can easily be overlooked, especially by clinicians who are unfamiliar with this pathology. Facial nerve (cranial nerve VII) injury is a well-recognized complication of parotid surgery, upto 25% chance of facial nerve damage during parotid surgery in the literature (3,4,5).

## **CASE REPORT:**

A 23 year old female was self-referred to Plastic Surgery at Independent University Hospital, Faisalabad, Pakistan in Nov 2020 for left parotid gland open biopsy after inconclusive fine needle aspiration cytology (FNAC) result. She underwent left parotid gland open incisional biopsy (superficial parotidectomy performed) under general anaesthesia and post operatively she developed signs and symptoms of left facial palsy. Two weeks later she received Botox injection to symmetrize the face and when swelling/oedema subsides, buccal branch & marginal mandibular branch (facial nerve two branches found cut and repaired) under general anaesthesia after one month from previous surgery.

After the second surgery, she developed immediate pronounced facial deviation, inability to mouth opening and pain on chewing.

After one year on examination, she had left TMJ dislocation with Angelchick's class II malocclusion. Her facial asymmetry is mainly in the middle of face around left side facial orifice and nasolabial fold. She had normal eye closure and symmetrical eye brow (normal facial nerve function).

One year postoperatively, the nerve conduction study (NCS) and electromyography (EMG) test reported as: mild old damage to left facial nerve with good recovery. Her facial deviation to right side does not correlate to minor facial nerve damage, but it is due to dissociative element or TMJ dislocation.

OPG and 3D CT scan reported as: severe dislocation of left TMJ anteriorly with fibrosis around TMJ.

She was offered TMJ correction by maxillofacial surgeon but refused to have the TMJ correction by maxillofacial surgeon. Her issue of left TMJ joint dislocation and then stiffness/fibrosis three years postoperatively is entirely due to general anaesthetic paralytic agents and related procedure of intubation/extubation resulting in pain, inability to open mouth, difficulty in chewing, facial deviation to right side (1,2,6,7,8)

#### **DISCUSSION:**

TMJ dislocation that occurs during operations is often unnoticed until patients become aware of pain and swelling. Unrecognized TMJ displacement can lead to chronic pain and restricted joint mobility (6). TMJ dislocation is the dislodgement of the condyle from its normal position in the squamo-temporal portion of the cranial base (7,8).

TMJ dislocation is a serious complication of intubation that can lead to long-term sequelae if not treated in a timely manner. Common symptoms include pain, inability to close oral cavity, facial deviation, drooling, and dysarthria (4 - 9) .

The incidence of TMJ dysfunction following endotracheal intubation/extubation is reported to be 5% (10,11).

As per literature search, TMJ dislocation should be identified at the time of extubating or in recovery room and should be relocated immediately by anaesthesiologist. If undiagnosed initially as in this case report, then surgical exploration and relocation is the best option by Maxillofacial Surgeon to relieve the persistent symptoms.

## CONCLUSION:

Early diagnosis is required to prevent delays in treatment, which can lead to long-term sequelae for the patient complaints leading to medicolegal issue of compensation. After surgery in the recovery room, normal mandibular excursion should be tested in every patient whether the surgery in head & neck region or remote body areas by asking the patient to open and close their mouth.

**Author's informations:** Prof Munir Alam, Consultant Plastic Surgeon, King Abdullah Hospital, Bisha, Saudi Arabia.

**Email:** mrmuniralam@gmail.com

**Ph:** +966554984650

**Submission Date:** 16/03/2024

**Conflict of Interest:** None

**Funding:** None

**Author's Contribution:** Corresponding author is the main author for writing, compiling, reviewing and corrections

**Acknowledgements:** NA

**Competing interests:** Author declare no competing interests

**Availability of data and material:** This is a case study and no other data other than included in this article.

**Consent for Publication:** Obtained

**Ethical Approval and Consent to participate:** **Consent for publication:** Written informed consent was obtained from the patient for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

## REFERENCES:

1. [4](https://www.google.com/search?q=incedence+of+tmj+dislocation+with+intubation&sca_esv=d2dfab19ddcdba41&sca_upv=1&rlz=1C1CHZN_enIE985IE985&sxsrf=ACQVn0_xxfiX-kVgCsyfZARGyX27_Xhx8Q%3A1710577152391&ei=AFb1Zdu9F66ckdUPhde7iA8&ved=0ahUKEwjvZ28rPiEAXUuTqQEHYXrDvEQ4dUDCBA&uact=5&oq=incedence+of+tmj+dislocation+with+intubation&gs_lp=Egxn3Mtd2l6LXNlcnAiLGluY2VkZW5jZSBvZiB0bWogZGlzbG9jYXRpb24gd2l0aCBpbmR1YmF0aW9uMgoQIRgKGKABGMMESIudUABYwRNwAHgBkAEAmAHYAaABmxKqAQYwLjExLjK4AQPIAQD4AQGYAgugAoIQmAAkgcFMC45LjKgB_o1&scient=gws-wiz-serp (Accessed on 16/03/2024)</a></li><li>2. Agrò F, Salvinelli F, Casale M, Antonelli S. Temporomandibular joint assessment in anaesthetic practice. <i>Br J Anaesth.</i> 2003;7(5):707–708.</li></ol></div><div data-bbox=)

3. Atif Hafeez Siddiqui, Saad Shakil, Danish ur Rahim, and Irfan Ahmed Shaikh Post parotidectomy facial nerve palsy: A retrospective analysis, *Pak J Med Sci.* 2020 Jan-Feb; 36(2): 126–130.DOI: [10.12669/pjms.36.2.1706](https://doi.org/10.12669/pjms.36.2.1706).
4. Musani MA, Zafar A, Suhail Z, Malik S, Mirza D. Facial nerve morbidity following surgery for benign parotid tumours. *J Coll Physicians Surg Pak.* 2014 Aug;24(8):569-72. PMID: 25149836.
5. [Maria Grosheva MD](#),[Jens Peter Klussmann MD](#),[Carolyn Grimminger MD](#),[Claus Wittekindt MD](#),[Dirk Beutner MD](#),[Mira Pantel MD](#),[Gerd Fabian Volk MD](#),[Orlando Guntinas-Lichius MD](#), Electromyographic facial nerve monitoring during parotidectomy for benign lesions does not improve the outcome of postoperative facial nerve function: A prospective two-center trial, *Facial Plastics/Reconstructive Surgery*, 28 August 2009, <https://doi.org/10.1002/lary.20637> (Accessed on 16/03/2024)
6. Roze des Ordons A, Townsend DR. Trachlight management of succinylcholine-induced subluxation of the temporo-mandibular joint: a case report and review of the literature. *Can J Anaesth.* 2008;55:616–621.
7. Roze des Ordons A, Townsend DR. Trachlight management of succinylcholine-induced subluxation of the temporo-mandibular joint: a case report and review of the literature. *Can J Anaesth.* 2008;55:616–621.
8. Akinbami BO. Evaluation of the mechanism and principles of management of temporomandibular joint dislocation. Systematic review of literature and a proposed new classification of temporomandibular joint dislocation. *Head Face Med.* 2011;7:10

**List of abbreviations:**

TMJ – Temporomandibular joint  
 FNAC – Fine needle aspiration cytology  
 NCS – Nerve conduction study  
 EMG – Electromyography  
 OPG – Orthopantomogram  
 3D – Three dimensional  
 CT – Computed tomography