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NAVIGATING THE COMPLEXITIES: A COMPREHENSIVE APPROACH TO MANAGING VOMITING-INDUCED TMJ DISLOCATION

Maxillofacial Surgery

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ABSTRACT

Dislocation of the Temporomandibular joint (TMJ) is characterized when the mandibular condylar head becomes dislodged from the glenoid fossa leading to significant dysfunction. It can manifest as either an acute or chronic dislocation. This case report delves into the treatment approach taken to manage anterior bilateral temporomandibular joint (TMJ) dislocation in a mentally challenged patient attributed to vomiting. The aim is to shed light on this unique etiology and discuss the management strategies employed for such cases. The Hippocratic bimanual intraoral technique was employed to successfully reduce the dislocation, followed by jaw immobilization using Barton's bandage. Prompt recognition, early diagnosis, and appropriate intervention are crucial for effective management. Further research and awareness are needed to enhance understanding and optimize care for this specific population.

KEYWORDS

TMJ dislocation, chronic vomiting, Hippocratic bimanual intraoral technique.

INTRODUCTION:

The condylar head displacement from the glenoid fossa occurs in TMJ dislocation, where the condyle moves excessively forward beyond the articular eminence.[1] TMJ dislocation constitutes around 3% of all documented instances of joint dislocation. The underlying causes of chronic recurrent TMJ dislocation can be attributed to various factors, including traumatic events, atypical chewing patterns, lax ligaments and capsule of TMJ, the elevated contractile response of lateral pterygoid muscle, and erosive changes of the articular eminence, masticatory muscle disorders, the influence of drugs like phenothiazine, or neurological disorders leading to increased muscle activity. Additional factors that can contribute to TMJ dislocation include yawning, the administration of anesthesia, psychiatric conditions, and connective tissue disorders. Non-traumatic cases comprise the majority, with common triggers including yawning, eating, dental interventions, endoscopic examinations, singing, or oral intubation.[2] It is noteworthy that chronic vomiting serves as a less common yet notable cause for this condition. This dislocation can manifest in various directions, including anterior, posterior, lateral, and superior.[1]

Cardinal clinical presentation encompasses an inability to achieve complete mouth closure, deviation of the jaw towards the unaffected side in unilateral cases, preauricular visible or palpable depression, masticatory muscle spasms, and severe pain localized in the TMJ, and these occurrences are frequently accompanied by aberrant drooling. TMJ dislocation is categorized into different types based on its characteristics, including acute, recurrent, or chronic dislocation, as well as whether it affects one or both sides of the jaw.[3]

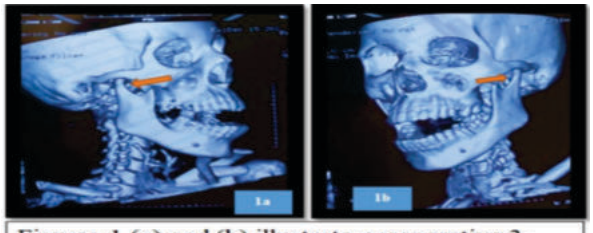
The rationale behind publishing this case report is to address the unique challenges encountered in managing Bilateral TMJ dislocation in mentally challenged patients. While the existing literature offers limited insights into this specific context, there is a clear gap in understanding TMJ dislocation among mentally challenged individuals who face increased vulnerability. The author seeks to fill this gap by contributing valuable insights into the management and understanding of TMJ dislocation in this specific population.

Case Report:

A 36-year-old female patient, accompanied by her caregivers, presented to the emergency room (ER) reporting difficulty in mouth closure and increased salivation over the last 48 hours. The patient's medical record indicated a history of recent vomiting episodes and the ongoing use of prescribed medications. Furthermore, the patient had a documented cognitive impairment since birth.

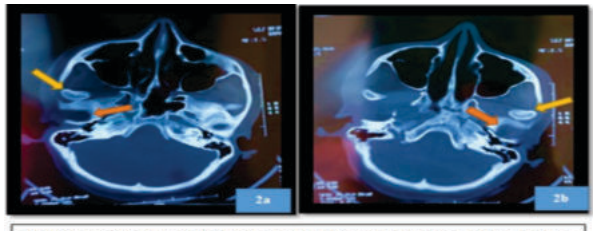
The extraoral examination revealed restricted mobility of the mandible, and a protruded mandibular position relative to the maxilla was observed, with evident bilateral preauricular hollowing. Intraoral assessments showed an open bite and an interincisal opening measuring 37 mm. Additionally, the patient exhibited poor oral hygiene, and root remnants in the 16, 17, and 26 regions, as well as caries in the 46 and 36 regions.

Due to the patient's noncompliant behaviour, the implementation of conventional radiographic techniques such as OPG and TMJ views was not achievable. Consequently, a diagnostic computed tomography (CT) scan was carried out to validate the diagnosis.



Figures 1.(a) and (b) illustrate preoperative 3-Dimensional images showcasing the anterior displacement of the condyle in relation to the glenoid fossa on the right and left sides respectively as indicated by the orange arrow pointing to the condylar head. These images demonstrate the mandibular position characterized by an open bite.

CT imaging identified the dislodgment of the condylar head from its anatomical position within the mandibular fossa, revealing an anterior relationship between the condylar head and the articular eminence, with the absence of the head of the condyle within the mandibular fossa, indicating the presence of dislocation. Clinical assessment and radiographic findings substantiated the diagnosis of the anterior bilateral TMJ dislocation. (Fig.1 and 2)



Figures 2.(a) and (b) present preoperative transverse sections of the CT scan, indicating the lack of the condylar head within the glenoid fossa on the right and left sides, respectively. The absence of the condylar head is highlighted by the orange arrow, while the yellow arrow indicates the position of the condyle anterior to the articular eminence on the right and left sides.

A conservative, Manual reduction method was deemed suitable for the patient's condition. The reduction of the TMJ dislocation was planned under the administration of local anesthesia, accompanied by a comprehensive explanation provided to the parents, ensuring their understanding of the approach and obtaining consent. The facial area is meticulously painted using an antiseptic solution, ensuring an aseptic field, and is appropriately draped in sterile clothing. The preauricular area is anesthetized with local anesthesia through a bilateral auriculotemporal nerve block and local infiltration.

The Hippocratic bimanual intraoral technique was employed to effectively reduce the bilateral anterior TMJ dislocation. This technique involved the surgeon positioning themselves facing the patient and using their thumb on the lower back teeth on both sides while their fingers wrap around the mandible laterally. A consistent downward pressure is implemented with their thumb and fingers gripping the mandible laterally, this maneuvering allowed for the gentle repositioning of the mandible into the glenoid fossa posteriorly. Immobilization of the jaw was implemented as a preventive measure following the TMJ dislocation reduction. Barton's bandage was applied for this purpose, ensuring the jaw remains stabilized and restricting the extent of mouth opening, reducing the likelihood of subsequent dislocation.

DISCUSSION:

Dislocation of the Temporomandibular joint (TMJ) is characterized when the mandibular condylar head becomes dislodged from the glenoid fossa. It is a relatively uncommon but significant problem that can cause pain, and functional impairment, and affect the overall quality of life for individuals affected by it.[4]

The diagnosis of dislocation of the TMJ is typically reliant on clinical assessment, which may include a thorough history, evaluation of symptoms, and physical assessment of the jaw joint. Imaging modalities such as panoramic radiography, temporomandibular joint (TMJ) views, and computed tomography (CT) scans can be helpful in confirming the diagnosis and assessing the extent of the dislocation.[5]

TMJ dislocation due to chronic vomiting in mentally challenged patients presents unique challenges in diagnosis and management. This case report highlights the importance of considering TMJ dislocation as a potential consequence of chronic vomiting, especially in vulnerable populations.

Identifying TMJ dislocation caused by chronic vomiting can present significant challenges, especially in mentally challenged individuals who may have limitations to articulate their symptoms effectively making it crucial to rely on comprehensive clinical assessments and observation of physical signs.

The underlying cause of TMJ dislocation associated with chronic vomiting is hypothesized to be linked to the forceful and repetitive muscle contractions of the jaw and neck that transpire during vomiting episodes. This repetitive strain can lead to the dislodgement of the condylar head from its anatomical position in the mandibular fossa, resulting in TMJ dislocation. For Individuals with pre-existing TMJ problems, chronic vomiting can intensify the condition and heighten the susceptibility to TMJ dislocation.

Prompt recognition and implementing appropriate treatment strategies, including manual reduction techniques and immobilization measures, can lead to successful outcomes and the prevention of recurrence. Further research and awareness are needed to enhance understanding and optimize the care of these patients.

This report aims to shed light on the complexities of the condition, highlight the importance of early diagnosis and appropriate intervention, raise awareness, and advocate for improved care and support for specific populations' unique challenges.

In conclusion, TMJ dislocation due to chronic vomiting is an uncommon but significant complication that can occur in mentally challenged patients. Early recognition and diagnosis of this condition are essential for prompt and effective management, which may involve manual reduction or other treatment strategies. Prevention of chronic vomiting through addressing the underlying cause and behavioural and dietary modifications is also crucial in preventing this and other associated complications. Collaboration among healthcare professionals, caregivers, and the patient's support network is crucial for successful outcomes and improved quality of life for such patients.

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