



RESEARCH ARTICLE

DENTAL TREATMENT OF A CHILD SUFFERING FROM TMJ ANKYLOSIS UNDER GENERAL ANESTHESIA: A CASE REPORT

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Abstract

Temporomandibular joint (TMJ) ankylosis is a joint disorder which refers to bone adhesion of the anatomic joint components, resulting in loss of function^[1]. The etiologies of TMJ ankylosis include previous trauma, previous TMJ surgery, arthritis, and infection. It can be congenital, and in some cases, idiopathic. The most common etiology of TMJ ankylosis is previous trauma, with the second being infection^[2].

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Introduction:-

Temporomandibular joint ankylosis is defined as bony or fibrous adhesion of the anatomic joint components accompanied by a limitation in opening the mouth, causing difficulties with mastication, speaking and oral hygiene as well as inadvertently influencing mandibular growth. TMJ ankylosis developed in childhood is one of the most difficult and complex health problems. It leads to mandibular deformity and growth impairment, hinders oral feeding (mastication and swallowing of food) and speaking, and results in poor oral hygiene causing dental caries and periodontal disease. Deformed alveolar processes negatively affect the eruption and position of teeth. The facial profile of the affected patient is often described as “bird profile”. The lower face is considerably shortened, the deficient mandible is visibly retruded and lacks the chin, the cervical mental angle is obtuse and the nasolabial angle is larger than normal. The face is asymmetric with the chin significantly deviated to the affected side. Lip incompetence is observed, with the lower lip trapped under the maxillary front teeth. As the child grows, the face becomes more and more asymmetrical owing to a limited mobility of the mandible, impaired growth and abnormal function of the muscles. A prolonged ankylosis leads to muscle atrophy. Secondary elongation and hypertrophy of the coronoid process subsequently results in limited mandibular mobility^[1-3]

Case Report:

A 3 year old tribal girl was first presented at the Heeya Pediatric Dental Clinic. She came with her father, who noticed limited mouth opening of the child since she was 1 year old which decreased gradually giving the child a typical bird face appearance. The limited mouth opening did not interfere with feeding. It was just difficult for the child to perform proper brushing. General examination at a pediatric dental clinic showed that she has normal growth spurt, with average height and weight in comparison with the local tribal population, on further examination of the oral cavity TMJ ankylosis was diagnosed. Her cognitive development was up to par.

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Pre-operative Pictures

Figure 1:- Straight Profile.



Figure 2:- Side Profile.

On extra-oral examination, the child presented with asymmetrical face, with reduced lower facial height, and deviated chin point to the left side. She also possessed a relatively small mandible, with a convex side profile. (Figure 1 and 2). Further imaging with CT scan showed that there is osseous fusion between the left condylar head and the glenoid fossa.



Surgical Procedure: Figure 3:- (A to G) Surgical Approach.

Post-Operative pictures: Figure 4:- (H to I).

The surgery was performed under general anaesthesia with nasotracheal intubation assisted by fibre optic scope. Exposure of the left and right temporal region was done by taking a *Alkayat Brahmayincison* and it was deepened layer wise to the superficial temporalis fascia by using a sharp dissection blade. The flap was raised up to the zygomatic arch where the periosteum was incised on the most posterior aspect of the zygomatic arch. The subperiosteal plane of dissection was performed until the capsule of the joint was visible; a 45 degree incision was placed. First cut was placed at the lower most part of the condyle and the other cut was placed at the uppermost markable border of the condyle.

To prevent injury to the zygomatic branch of facial nerve, the exposure was not extended more inferiorly. A branch of the internal maxillary artery was identified and prevented. The entire ankylotic bone mass was removed in toto using a straight fissure bur until a thin layer of bone remained on the most medial aspect of the bony union. Gap arthroplasty was done. Osteoplasty was done using a routine mastoid round bur. Intra-operatively, a gap was created in the left and right TMJ and maximum inter incisal opening of 20 mm was recorded. Drain was placed to achieve pressure and draining of inflammatory exudates. Layer wise closure was achieved using vicryl and ethanol sutures.

Continuous sutures were taken for closure. Infection pain & swelling was controlled with routine antibiotic and analgesic regime.

Discussion:-

TMJ ankylosis is caused by a variety of conditions such as local or systemic infections, TMJ arthritis, trauma, and neoplasm. The most common etiology of TMJ ankylosis is previous trauma, with the second being infection.^[4] TMJ ankylosis as a complication of infection is a known but extremely rare condition, with only few reported scientific literature. TMJ ankylosis associated with undiagnosed septic arthritis may not be diagnosed until many years later.^[5] According to a classic approach, autogenous tissues should be used in the treatment of developmental and functional disorders accompanying TMJ ankylosis in children^[6]. TMJ ankylosis as a complication of infection is a known but extremely rare condition, with only few reported scientific literature.^[7] Kaban suggested children of 3 years of age and older are suitable candidates for ankylosis release. It is not necessary to wait for growth completion when deciding the timing of surgery.^[8]

Conclusion:-

The treatment of TMJ ankylosis through creating an adequate gap is of paramount importance in preventing any future recurrence and this can be achieved only when good access is gained to this complex anatomical join.^[9] Jaw correction exercises must be done to achieve great results.^[10]

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