

UNILATERAL TMJ ANKYLOSIS: A CASE REPORT

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ABSTRACT

Restrictions on mandibular movements, such as the fibrous adhesions or bone fusion between condyle, disc, glenoid fossa, and eminence, are caused by ankylosis of the temporomandibular joint (TMJ), which is an intracapsular union of the disc–condyle complex to the temporal articular surface. It is a severe and incapacitating ailment that can lead to issues with speech, eating, swallowing, looking well, and maintaining personal hygiene.

Case report: This report describes a case of a 9-year-old girl who was diagnosed with unilateral right bony TMJ ankylosis and was unable to open her mouth. The surgical management included gap arthroplasty with an interpositional temporalis muscle flap followed by vigorous physiotherapy.

Conclusion: Due to its high recurrence rate and technological difficulties, treating TMJ ankylosis is extremely difficult. As members of the healthcare team, the orthodontist, oral and maxillofacial surgeon, pediatric dentist, psychologist, and physical therapist treat it.

KEYWORDS: Ankylosis, case report, gap arthroplasty, temporomandibular joint

INTRODUCTION

The mandibular condyle fused to the base of the skull is known as temporomandibular joint (TMJ) ankylosis. It is a crippling illness that primarily affects adolescents and young adults. It leads to issues with speech, digestion, mastication, appearance, and oral hygiene. It may cause mandibular and maxillary abnormalities in growing patients, which could lead to malocclusion. The youngster may experience low self-esteem and develop shy and reclusive behaviors as a result of the growing abnormality. In 1938, Kazanjian¹ distinguished between two forms of TMJ ankylosis: extra-articular and intra-articular. Currently, there are five categories: bony, fibrous, fibro-osseous, complete, and incomplete^{2,3}.

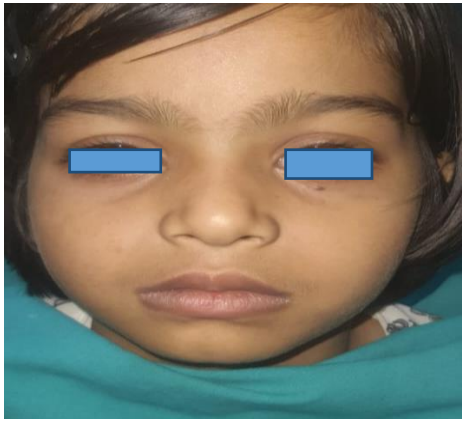
When a child has unilateral ankylosis of the TMJ, their chin deviates to the affected side, resulting in facial asymmetry. A thorough preoperative radiographic evaluation of the kind and severity of ankylosis is necessary for the successful treatment of TMJ ankylosis. A case report of a unilateral TMJ ankylosis case that was successfully treated in the early adolescent years is presented.

CASE REPORT

The main complaint of a 9-year-old child who came to Rama Dental College Hospital and Research Centre in Kanpur was that she couldn't open her mouth. The patient's medical history indicated that she suffered a hit to the right side of her face after a fall when she was 5-years-old. She experienced right TMJ pain and swelling, which gradually went away. She was unable to eat properly, though, because there was also a progressive decrease in mouth opening.

A class II dental relationship and a hypoplastic mandible were found during the initial clinical examination. An extraoral examination showed asymmetric face features, including right cheek fullness. The chin was twisted to the right. The patient had almost nil mouth opening. There was relatively mild rotation on the left side and no palpable involvement over the right TMJ. Radiographic investigation included computed tomography (CT) that revealed bony ankylosis along the entire antero-posterior and medio-lateral dimension of the right Temporomandibular joint. These results led to the confirmation of a diagnosis of unilateral grade IV bony ankylosis of the right TMJ.

Following a thorough clinical and radiological assessment, a gap arthroplasty procedure using an interpositional temporalis muscle flap was scheduled under general anesthesia for the right TMJ.



The postoperative period went without incident. Following surgery, a 25 mm mouth opening was seen. Severe postoperative physical therapy was initiated to preserve joint mobility. Following

two weeks of physical treatment with a wooden spatula, the patient's mouth openness measured 35 mm. Hister's mouth gag was later used to administer mouth opening exercises.

DISCUSSION

TMJ ankylosis has well-documented⁴ causes and treatments, with trauma and infection identified as the two key causes⁵. The most common causative cause for TMJ ankylosis is generally trauma. Hypomobility is thought to result from intra-articular hemorrhage, scarring, and the creation of extra bone if trauma is the cause.

Mandibular retrognathism in children with TMJ ankylosis can have related functional and aesthetic deficits. As a result, the goal of treatment should be to restore joint function and harmonic jaw function as soon as the disease is identified^{6,7}.

Using severe bone removal, Raveh et al.⁸ reported their retrospective experience with 26 patients of complete bony TMJ ankylosis. Movement that is satisfactory can be achieved with aggressive resection, early mobilization, and rigorous postoperative physiotherapy. Due to the large amount of bone that is removed from the ramus, this procedure has certain drawbacks, including the potential to damage the internal maxillary artery and anterior open bite deformity. The extremely low recurrence rate of this method is one of its benefits.

For the treatment of TMJ ankylosis, a seven-step protocol has been developed: (i) aggressive resection of the ankylotic segment; (ii) ipsilateral coronoidectomy; (iii) contralateral coronoidectomy when necessary; (iv) temporalis fascia or cartilage lining the joint; (v) reconstruction of the ramus using a costochondral graft (CCG); (vi) rigid fixation of the graft; and (vii) early mobilization and robust physiotherapy. By using this technique, Kaban et al. were able to obtain a mean maximum postoperative interincisal opening of 37.5 mm at a year's end. Of the 18 joints, 16 had lateral excursions, and 2 had pain⁹.

The instance described above is a case of unilateral, complete, bony ankylosis due to trauma. The patient's main complaint was limited mouth opening. Following an immediate surgical procedure, the mouth opening improved from 1-2 mm to about 35 mm two weeks later. Thorough physical therapy must be done in order to enhance mouth opening and, more importantly, to avoid re-ankylosis. Simple exercises with wooden spatulas were performed in this instance, and Hister's mouth gag equipment was then administered. It was discovered that this greatly increased the degree and ease of mouth opening.

CONCLUSION

Children with TMJ ankylosis provide a difficult challenge. Children who have experienced traumatic injury to their TMJ may be at risk for developing ankylosis. To get a good outcome, thorough surgery and diligent long-term treatment are thought to be necessary. Reossification, insufficient jaw stretching for any reason, or partial or insufficient primary release can all lead to reankylosis¹⁰.

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