

CASE REPORT

Aggressive Oral Physiotherapy Related to Space InfectionVivek Kumar¹, Manoj M.², Avanindra Kumar³, Amit kishor⁴**ABSTRACT**

Temporomandibular joint (TMJ) ankylosis is a stiffness of a joint due to abnormal fusion and rigidity of the bones of the TM joint. The recent followed treatment protocols are Gap arthroplasty, interpositional graft/spacer, insensitive and aggressive physiotherapy immediately (early mobilization) after the surgery. The present study reports a case of unilateral fibrous ankylosis of the TMJ with unusual clinical observation.

Keywords: Temporomandibular joint, Ankylosis, Arthroplasty, Aggressive physiotherapy.

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¹Reader, Department of Oral and Maxillofacial Surgery,
³Reader, Department of Oral and Maxillofacial Pathology, Dr. B R Ambedkar Institute Of Dental Sciences, ⁴Senior Lecturer, Department of Pedodontics & Preventive Dentistry, Sarjug Dental College and Hospital Darbhanga, Patna, Bihar, India,
²Professor, Department of Oral and maxillofacial surgery, MOH Hospital, Riyadh.

Corresponding author: Dr. Avanindra Kumar, RCA-89 South of T.V. Tower Bahadurpur Housing Colony Patna-26, India.

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INTRODUCTION

Temporomandibular joint (TMJ) ankylosis is a stiffness of a joint due to abnormal adhesion or fusion and rigidity of the mandibular condyle to the base of the skull. The fusion is directly joining of the bones or a fibrous growth of tissues within the joint. As early as 1938 it is classified into two types by Kazanjian¹ intra articular and extra articular ankylosis, But in present time TMJ ankylosis classified according to the site - Intra articular and Extra articular, type of tissue involved - Boney, Fibrous and Fibro-osseous tissue, and the degree of fusion –

Complete and Incomplete. Sawhney classified TMJ ankylosis as type I - in which the condyle is present and there are

only fibrous adhesions, type II - in which there is bone fusion, the condyle is remodeled, and the medial pole is intact, type III - in which there is an ankylotic block, the mandibular ramus is fused to the zygomatic arch, the medial pole remains intact, and type IV - in which there is true ankylotic block and the anatomy is deranged because the ramus is fused to the skull base.³ Trauma in early childhood is the most common cause of TMJ ankylosis.³⁻⁴ and it is often associated with growth disturbances that lead to mandibular hypoplasia and asymmetry. The incidence varies from 31% to 98%, depending on the study.³⁻⁶ Local or systemic infection, mostly secondary to contiguous spread from mastoiditis or otitis media, account for 10 to 49% of cases. Systemic disease, such as ankylosing spondylitis, rheumatoid arthritis, and psoriasis, accounts for about 10% of cases.³⁻⁶

CASE REPORT

A 8-year-old male patient reported to us with chief complaint of difficulty in mouth opening for last 15-20 days. Pt was alright three weeks back when he or his parents noticed restricted mouth opening and pain present over right pre-auricular region. Pain was subsided by the unknown medication. He gave history of trauma on right facial region about two-three months back. Clinical examination revealed swelling present over right pre-auricular region, which was non fluctuant. Right condylar movement was not felt properly with respect to left. The interincisal mouth opening 10mm only with few decay tooth in third quadrant without any infection present intraoral. Diagnostic records included orthopantomogram (OPG), and TMJ view for rule out of any maxillofacial fracture involving temporomandibular joint or other facial bone. Based on the above findings and imaging report the case was diagnosed as a Fibrous ankylosis of right temporomandibular joint.

On the basis of available resources treatment plan was Non-surgical approach. Non-surgical treatment is almost always the initial treatment approach to reduce pain and improve function. Therapy includes:

1. Pain management with analgesics or anti-inflammatory medication.
2. Modification of diet for joint activity.
3. Improving joint mobility with muscle relaxants, oral physiotherapy and exercises.⁷

Oral Physiotherapy by the means of aggressive (force full) mouth opening by mouth gag under general anesthesia, followed by mouth opening exercise using ice-cream sticks.⁷

RESULT

3rd day after mouth opening physiotherapy, his mouth opening increase and swelling also subsided.

Follow-up – We continued the same mouth opening physiotherapy and patient was recalled after 5 days.

After one week Patient came with complains of pain and swelling over right facial region. Swelling was non tender, fluctuant and extended from right temporal region up to right eye, local temperature was slightly raised, Mouth opening restricted till 10mm. Now on the basis of clinical finding, this case was diagnosed as– Right Temporal space infection.¹⁴

Patient was treated with incision and drainage¹⁴ via extra oral approach under local anaesthesia with appropriate antibiotics¹⁴ followed by mouth opening physiotherapy. But recurrence was noted after 7 days following physiotherapy for which exploration¹⁴ was done under general anaesthesia with adequate antibiotic coverage. The mouth opening was not adequate, so physiotherapy still continue.

3rd time occurrence of infection

10 days post-operatively, we noticed a fluctuant swelling in the same region again, after physiotherapy which was however significantly less as compared before. Mouth opening of about 35 mm was already achieved, hence, physical mouth opening exercises were stopped and incision and drainage¹⁴ was again the only choice of treatment following which the patient recovered uneventfully and is been followed up till date (18 months), without any signs of recurrence and a mouth opening of about 38 mm.

DISCUSSION

Hypomobility of the jaw is one of the causative results of TMJ ankylosis, but it may also impair mandibular growth and result in mandibular retrognathism. These problems have psychological, functional and esthetic implications, as well as causing difficulties in day to day nutrition and oral hygiene maintenance.

The causes and treatment of TMJ ankylosis have been well documented, in last two decades. In children, TMJ ankylosis can result in mandibular retrognathism with attendant esthetic and functional deficits. Therefore, treatment should be initiated as soon as the condition is recognized, with the main objective of re-establishing joint function with jaw harmony. The effective treatment of TMJ ankylosis requires detailed preoperative evaluation of the type and extent of the deformity.

A variety of techniques are developed for the treatment of TMJ ankylosis, including gap arthroplasty,⁹⁻¹⁰ intraoral coronoidectomy, forceful opening of the jaw under general anaesthesia, interposition arthroplasty, using temporal muscle fascia, ear cartilage or alloplastic material.^{11,12,13} autogenous CCG¹³ and free vascularized whole-joint transplants. Several prosthetic options for TMJ reconstruction including, Silas-



Figure-1: OPG



Figure-2: Interincisal opening



Figure-3: I&D



Figure-4: After drain removal & post-operative

tic sheeting material, the TMJ condylar prosthesis, custom glenoid fossa implants, articular eminence implants and mandibular reconstruction plates with condylar heads are also followed treatment modality. However, no consensus in the literature about the best treatment in these cases, results have varied and recurrence rates are still high.

Kaban et al.⁸ described a protocol for the treatment of TMJ ankylosis with one-year follow-up. According to the paper,

this protocol was ideal for treating this condition. The Kabans 7-step protocol was¹ Aggressive resection of the ankylotic segment,² Ipsilateral coronoidectomy³ Contralateral coronoidectomy when necessary,⁴ Lining of the joint with temporalis fascia or cartilage,⁵ Reconstruction of the ramus with a CCG,⁶ Rigid fixation of the graft and,⁷ Early mobilization and aggressive physiotherapy. According to this protocol, Kaban⁴ achieved a mean maximum postoperative interincisal opening at 1 year of 37.5 mm, with lateral excursions present in 16 of 18 joints and pain present in 2 of 18 joints.⁴ This protocol formed on the basis of the treatment plan that was undertaken in this patient group.

The most frequent complications of surgery were limited mouth opening, reankylosis, and occlusal defects. Careful surgical technique and meticulous physical therapy of long duration are essential to avoid complications and attain satisfactory results.

The patient in the present study had a fibrous ankylosis. Based on the history, diagnosis and age of the patient, a forceful mouth opening under general anesthesia, followed by aggressive physiotherapy was the choice of treatment. The interesting feature of this case was its unusual clinical presentation after treatment performed. The patient reported back with clinical signs and symptom of right temporal space infection. The probable causes of temporal space infection were recurrent hematoma due to aggressive physiotherapy, causing overstretching of temporalis muscle leading to intramuscular injury, bleeding, and inflammation of the muscle.

The patient was further advised to continue physiotherapy but this time in controlled manner under appropriate antibiotic coverage, and subsequently the patient's mouth opening achieved in normal range and no further infection was reported.

CONCLUSION

The oral physiotherapy or mouth opening physiotherapy that includes mouth gag, ice-cream sticks, finger-assisted stretching, when advocated should be in controlled manner. It starts with gradual or passively not aggressive and of mild to moderate intensity with antibiotic cover to avoid any future unexpected complications.

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