



### **Case Report:**

## **A Rare Case of Post Septic Temporomandibular Joint Ankylosis**

### **Authors**

**Binayak Baruah**, Assistant Professor,  
**Subhabrata Sengupta**, Associate Professor,  
**Bhargaw Ilapakurty**, Post Graduate Trainee,  
**Santosh Prasad Kesari**, Post Graduate Trainee,  
**Department of ENT, Sikkim Manipal Institute of Medical Sciences, Gangtok, India.**

### **Address for Correspondence**

#### **Dr Binayak Baruah,**

Assistant Professor, Department of E.N.T.  
Sikkim Manipal Institute of Medical Sciences,  
5th mile, Tadong,  
Gangtok, Sikkim – 737 102,  
India.

**E-mail:** binayak\_binit@rediffmail.com

### **Citation**

Baruah B, Sengupta S, Ilapakurty B, Kesari SP. A Rare Case of Post Septic Temporomandibular Joint Ankylosis. *Online J Health Allied Scs.* 2013;12(2):17 Available at URL: <http://www.ojhas.org/issue46/2013-2-17.html>

### **Open Access Archives**

<http://cogprints.org/view/subjects/OJHAS.html>

<http://openmed.nic.in/view/subjects/ojhas.html>

Submitted: Mar 17, 2013; Accepted: Jun 15, 2013; Published: Aug 25, 2013

**Abstract:** Temporomandibular joint ankylosis involves fusion of the mandibular condyle to the base of the skull. It is a major clinical problem that affects many patients suffering from facial trauma, infection or systemic disease. The treatment of Temporomandibular joint ankylosis poses a significant challenge because of technical difficulties and a high incidence of recurrence. This report describe a rare case of a 16 year-man with complete inability to open his mouth, diagnosed with unilateral post septic left bony Temporomandibular joint ankylosis. The surgical approach consisted of gap arthroplasty followed by vigorous physiotherapy.

**Key Words:** Temporomandibular joint disorders; Ankylosis; Gap arthroplasty

### **Introduction**

Temporomandibular joint (TMJ) ankylosis is a disorder that leads to a restriction of the mouth opening from partial reduction to complete immobility of the jaw. It is most commonly associated with trauma. Local or systemic infection or systemic disease, such as ankylosing spondylitis, rheumatoid arthritis, or psoriasis are a rarity.(1,2)

TMJ ankylosis may be classified by a combination of location (intra- or extra-articular), type of tissue involved (bony, fibrous, or fibro-osseous) and extent of fusion (complete, incomplete).(3) Literature classifies ankylosis as true and false. Any condition that gives rise to osseous or fibrous adhesion between the surfaces of the temporomandibular joint is a true ankylosis. False ankylosis results from pathologic conditions not directly related to the joint.(1,4) It may be caused by enlargement of the coronoid process, depressed fracture of the zygomatic arch, scarring from surgery, radiation,etc.

The TMJ ankylosis is a extremely disabling affliction that causes problems in mastication, digestion, speech, appearance, and hygiene.(5) In growing patients, deformities of the mandible and maxilla may occur together with malocclusion.(6,7) There is no consensus in the existing literature of the best treatment for TMJ ankylosis. Several authors studied and developed different techniques, but recurrence still remains the major problem when treating TMJ ankylosis.(1,2,5,8) Inadequate exposure of the TMJ region often leads to insufficient removal of the ankylotic bone, thus leading to a recurrence of the problem. (3,7)

The purpose of this paper is to highlight this rare case of post septic temporomandibular joint ankylosis.

### **Case Report**

A 16 year old male presented to our department with chief complaint of inability to open his mouth since 6 years of age. He gave history of fever along with some swelling in his inguinal region when he was six years old. After about two weeks, he gradually found that he was unable to open his mouth fully. The disease progressed and within a year and half , his mouth opening was so restricted that he could barely open his mouth. On examination, we found severe trismus (grade 4). He also was having mandibular retrognathism.( Figure 1) His Ear and nose examination were normal. All his blood parameters were normal. His Chest x-ray as well as X-ray of his cervical and/thoraco-lumbar spine were normal. CT scan and MRI mandible suggested left sided osseous fusion of the mandibular ramus with the fronto-temporal bone. The left TMJ, the condylar and coronoid processes are not seen separately.

After complete evaluation, a surgical treatment with gap arthroplasty was planned under general anesthesia. Gap arthroplasty is a term used to describe the operation in which

a section of bone is removed and no substance is interposed between the two cut bony surfaces. The hair in the left temporal region was shaved. The TMJ approach consisted of a preauricular hockey stick shaped incision.(8) Dissection was carried out through the superficial temporal fascia, which was retracted anteriorly to protect the facial nerve, and the periosteum over the zygomatic arch was incised.

After exposing the joint and identification of the site of the ankylosis, aggressive excision of the bony mass was done using drills and electric saw, creating a gap of at least 25 mm between the roof of the fossa and the mandible. After vigorous irrigation with saline, suction drains were placed after the resection to avoid edema and infection. The incisions were closed, and a pressure dressing was applied. The post-operative course was uneventful. A mouth opening of 12 mm was noted 2 days after surgery. Vigorous post-operative physiotherapy was started to maintain the mobility of the joint. After 5 days with physiotherapy using wooden spatula, mouth opening was noted to be 25 mm.(Figure 2) The patient was instructed to continue with exercises for at least a period of 1 year.



**Figure 1: Pre operative mouth opening of the patient**

#### Discussion

The causes and treatment of TMJ ankylosis have been well documented, with trauma and infection identified as the two leading causes. TMJ ankylosis can result in mandibular retrognathism with 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 along with harmonious jaw function. Infection of the TMJ most commonly occurs secondary to contiguous spread from otitis media or mastoiditis, but it may also result from hematogenous spread of infectious conditions such as tuberculosis, gonorrhea or scarlet fever. To prevent surgical recurrence in cases afflicted with ankylosis, radical removal of the bony or fibrous ankylotic segment is essential. (7,9) However the unfavorable anatomic configuration and the proximity of vital structures like the facial nerve make the surgical procedure particularly difficult.(8)



**Figure 2: Mouth opening on the 5th post operative day**



**Figure 3: Post operative X Ray**

Roychoudhury et al. (5) recommended a gap of at least 15 mm between the recountoured glenoid fossa and the mandible and subjected this gap to extensive active jaw opening exercises to prevent re-ankylosis when using gap arthroplasty. In our case the gap was in accordance with this recommendation.

According to Kaban et al. (9) the advantages of gap arthroplasty are its simplicity and short operating time and the disadvantages include creation of a pseudoarticulation and a short ramus, failure to remove all the bony pathology, and increased risk of reankylosis. A careful surgical technique, and subsequent meticulous attention to long-term physiotherapy are both considered essential to achieve a

satisfactory result. (10) Many studies have shown that the choice of interposition material is important in preventing recurrence. (6) Interposition of autogenous or alloplastic material at the osteotomy site is a mechanism to prevent recurrence; however, there are possible disadvantages, such as morbidity at the donor site and unpredictable resorption when autogenous material is used, and the risk of a foreign body reaction when alloplastic material is used. (10)

#### References

1. Gay-Escoda C, Arguero M. La corrección quirúrgica de la anquilosis de la articulación temporomandibular. Descripción de siete casos. *Avances en Odontoestomatología* 1994;10:74.
2. Kaban L, Pogrel MA, Perrott DH. Complications in oral and maxillofacial surgery. 1st ed. Philadelphia: WB Saunders; 1997.
3. Rowe NL. Ankylosis of the temporomandibular joint. *J R Coll Surg Edinb* 1982;26:67-79.
4. Kazanjian VH. Temporomandibular joint ankylosis. *Am J Surg* 1955;90:905.
5. Roychoudhury A, Prakash H, Trikha A. Functional restoration by gap arthroplasty in temporomandibular joint ankylosis: A report of 50 cases. *Oral Surg Oral Med Oral Pathol* 1999;87:166-169.
6. Miyamoto H, Kurita K, Ogi N, Ishimaru JI, Goss A. The role of the disk in sheep temporomandibular joint ankylosis. *Oral Surg Oral Med Oral Pathol* 1999;88:151-158.
7. Raveh J, Vuillemin T, Lädach K, Sutter F. Temporomandibular joint ankylosis: surgical treatment and long-term results. *J Oral Maxillofac Surg* 1989;47:900-906.
8. Ellis III E, Zide MF, eds. Surgical Approaches to the facial skeleton. Philadelphia: WB Saunders; 1995.
9. Kaban LB, Perrott DH, Fisher K. A protocol for management of temporomandibular joint ankylosis. *J Oral Maxillofac Surg* 1990;48:1145-1151.
10. Manganello-Souza LC, Mariani PB. Temporomandibular joint ankylosis: Report of 14 cases. *Int J Oral Maxillofac Surg* 2003;32:24-29.