



BILATERAL TEMPOROMANDIBULAR JOINT ANKYLOSIS – A CASE REPORT

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ABSTRACT Ankylosis of the temporomandibular joint (TMJ) involves fusion of the mandibular condyle to the base of the skull. Trauma and infection are the leading causes of ankylosis. The first sign of a significant problem may be increasing limitation of jaw opening, and it is usually not associated with pain. Early diagnosis and treatment are crucial if the worst sequelae of this condition are to be avoided. We present a case report of bilateral TMJ ankylosis in a 34-year-old female patient.

KEYWORDS :

INTRODUCTION

Ankylosis of temporomandibular joint (TMJ) is an intracapsular union of the disc-condyle complex to temporal articular surface that restricts mandibular movement, including the fibrous adhesions or bony fusion between condyle, disc, glenoid fossa, and articular eminence.^[1] TMJ ankylosis is more commonly associated with trauma (13–100%), local infections like middle ear infection (10–49%), or systemic diseases (100%), such as ankylosing spondylitis, rheumatoid arthritis, and psoriasis. However, it can also occur congenitally and secondary to tumors in the region of TMJ. Ankylosis can also occur as a result of TMJ surgery.^[2-5]

It is a serious and disabling condition that may cause problem in facial growth, mastication, swallowing, digestion, speech, appearance, and poor oral hygiene with rampant dental caries. Facial asymmetry develops if only one side is affected. Disturbances of facial and mandibular growth and acute compromise of the airway invariably result in physical and psychological disability.^[6-14]

Severity of ankylosis is evaluated based on the degree to which mouth opening is restricted. Conventional plain film radiography, computed tomography (CT) scans, or MRI scans are helpful to determine the abnormality in the bony or soft tissue formations in the joint.^[15] The treatment of TMJ ankylosis poses a significant challenge because of technical difficulties and high incidence of recurrence.^[16] Team approach is required for resolving functional, esthetic (cosmetic), psychological (emotional), or social problems associated with ankylosis. Here we report a case of bilateral TMJ ankylosis in an adult female with a history of trauma and mandibular fracture.

CASE REPORT

A 34-year-old female patient reported to our dental out patient department with the chief complaint of inability to open her mouth for the past one year.

On questioning patient gave history of trauma in the maxillofacial region three years before for which she underwent treatment in a private hospital. She also stated that a fracture of mandible was fixed with internal plating. Patient first noticed difficulty in opening her mouth one year back which progressed gradually to the present state.

On pre-auricular palpation both the condyles were not felt and no tenderness was elicited. The inter incisal separation between upper and lower incisors was only 3mm. Lateral and protrusive movements of mandible were also restricted.

Based on the positive findings such as history of trauma before 3 years, inability to palpate both the condyles, and mouth opening of 3 mm, provisionally diagnosis was made as TMJ ankylosis. Differential diagnosis considered was bilateral condylar hypoplasia, arthritis and condylar fractures.

Routine blood investigations were within normal limits. A panoramic

radiograph revealed resorption of greater part of the condyle of right and left side and the sigmoid notch was approximated to the base of the skull. There was obliteration of joint spaces with extensive bone formation between condyle and temporal bone.

Coronal sections of computed tomography (CT) scan in bone window setting showed extensive bone formation, especially from the medial aspect of the condyle to the base of the skull. However, in CT section, complete obliteration of joint space was not appreciated. These features were suggestive of bilateral bony ankylosis of temporomandibular joint.

DISCUSSION

The word “ankylosis” is a Greek word meaning stiff joint. Ankylosis is divided into extracapsular and intracapsular types, the former being the ankylosis not involving TMJ structures.^[17] Intra capsular ankylosis affects TMJ structures and may extend to surrounding structures in the form of fibrous adhesions or bony fusion.

Welden E Bell described ankylosis of TMJ as, intra-capsular adhesions or ossification between the disc and temporal articular surface that attach the disc-condyle complex to the articular eminence. The suggested risk factors for TMJ ankylosis are trauma, local infections, systemic conditions like gout and arthritis and condylar neoplasms.

The infectious causes include mastoiditis and otitis media; the incidence of TMJ ankylosis of infective origin is on decline due to recent advances in antibiotic therapy. Trauma, frequently associated with fractures is now regarded as the common cause of ankylosis.

The pathogenesis of ankylosis is hypothesised as intraarticular hematoma formation following trauma gets organised by scarring which leads to formation of fibrous tissue. Later ossification of this fibrous tissue causes bony fusion of condyle, disc and fossa leading to hypomobility of the mandible.

Classification of ankylosis by Topazian (1966)^[18]

Type I : Fibrosis adhesion in or around the joint-restricting condylar gliding

Type II : Formation of a bony bridge between the condyle and glenoid fossa

Type III : Condylar neck is ankylosed to the fossa completely

Grading of TMJ ankylosis by Sawhney (1986)^[19]

Type I : Flattening or deformity of condyle with little joint space on radiograph. There is minimal bony fusion, but extensive fibrous adhesions around joint. Some movement is possible.

Type II : Bony fusion on the outer edge of articular surface, but no fusion on the deeper aspect of the joint

Type III : A bridge of bone exist between the ramus and zygomatic arch. The upper articular surface and the articular disk on the deeper aspect are still intact. Medially, a displaced atrophic condyle still exists and which is functional. Type III ankylosis results from a fractured-

displaced condyle, compared to the crushing types of condylar injuries as in types I and II.

Type IV : Total TMJ obliteration between ramus and skull by large bony mass. It is the most common type.

Clinically patient may present with obvious facial asymmetry especially in cases with unilateral involvement. Chin will be receded with hypoplastic mandible on affected side, resulting in deviation of chin and mandible towards affected side. Unilateral vertical deficiency along with roundness/fullness on the affected side is usually seen. Flatness and elongation of normal side as it grows towards the affected side are also commonly seen. In bilateral cases these findings will be exaggerated and usually without deviation. The lower border of the mandible on the affected side has a concavity that ends in a well-defined antegonial notch. Intraorally deviation of the maxillary and mandibular midlines towards affected side is common. The mouth opening is restricted: amount of opening depends upon degree of ankylosis.^[20,21,22]

Radiographically in fibrous ankylosis the articulating surface are usually irregular because of erosions. The joint space is usually very narrow and the two irregular surfaces may appear to fit one another like jigsaw puzzle. In case of bony ankylosis the joint space may be partly or completely obliterated by the osseous bridge, which can vary from a slender segment of bone, which may be difficult to locate, to a large bony mass. This extensive new bone may fuse the condyle to the cranial base. CT scan is ideal to visualise the extent of ankylosis.^[23,24]

The surgical treatment of the TMJ ankylosis is difficult due to high recurrence rate. Various surgical techniques are used; however, the results are not very satisfactory. Most popular surgical modalities for TMJ ankylosis included gap arthroplasty, interpositional arthroplasty and joint reconstruction with grafts and alloplastic materials. Principles necessary to overcome the recurrence of TMJ ankylosis are wide bone resection, use of interpositional space if it is needed and long-lasting early, aggressive postoperative physiotherapy.^[25,26]

CONCLUSION

Ankylosis is common after mandibular trauma, especially if followed by insufficient jaw movements during post operative period as in the case presented here. Hence, proper surgical management followed by post operative physiotherapy is mandatory to prevent complications like TMJ ankylosis.

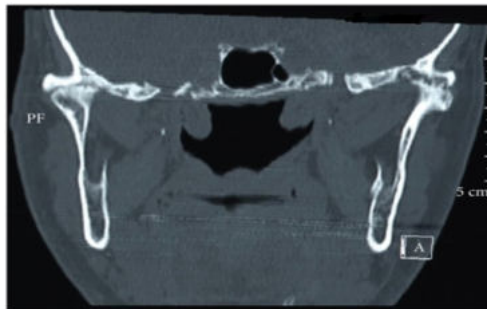


Figure 1 Coronal section of computed tomography



Figure 2 opg

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