



Case Report

Unilateral “Stiff” Tempomandibular Joint: A Case Report

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ABSTRACT

Temporomandibular joint is the main joint of stomatognathic system. Any abnormality in this joint can lead to discomfort to patient in form of inability to talk, open wide mouth, eating food and the most important is esthetically. Ankylosis of this joint is mostly noticed in children due to forceps deliveries and due to trauma to this area which remains unnoticed initially. In this article, we discuss a case of unilateral bony ankylosis involving temporomandibular joint in a 13 years old male patient along with the review of literature.

KEY WORDS: Temporomandibular joint, Unilateral ankylosis, Surgical treatment and Grafts.

INTRODUCTION

The temporomandibular joint (TMJ) is one of the most complex joint in head and neck region. It is formed by the mandibular condyle fossa of the temporal bone [1] When any abnormality such as ankylosis occurs in this joint this “articulating joint” becomes “stiff joint”. Temporomandibular joint ankylosis (TMJ) is a bony abnormality due to the fusion of mandibular condyle at the cranial base. The main etiological findings are trauma, systemic diseases, or infections [2]. Although there are many related etiological factors which will be discussed in discussion part along with treatment modalities.

CASE REPORT

A 13 years male patient reported to Department Of Oral Medicine And Radiology, Teerthanker Mahaveer Dental Institute, Moradabad, Uttar Pradesh with a complaint of chief complain of inability to open the mouth from past 2 years. Patient also gave history of trauma when he met with road accident & thus he got injury on chin region 1 year back. After this injury he noticed reduced mouth opening. For this he underwent surgery from Department of Oral Surgery, Kothiwal Dental College, Moradabad 1 year back. After 6 months this surgery he again noticed reduced mouth opening. There was no history of

similar findings in the family and no history of genetic and contagious diseases. On general physical examination, no abnormality was detected and all the vitals were in normal range. On extraoral examination, facial asymmetry was present, mouth opening was 0 mm, fullness of face on right side, chin is also deviated towards

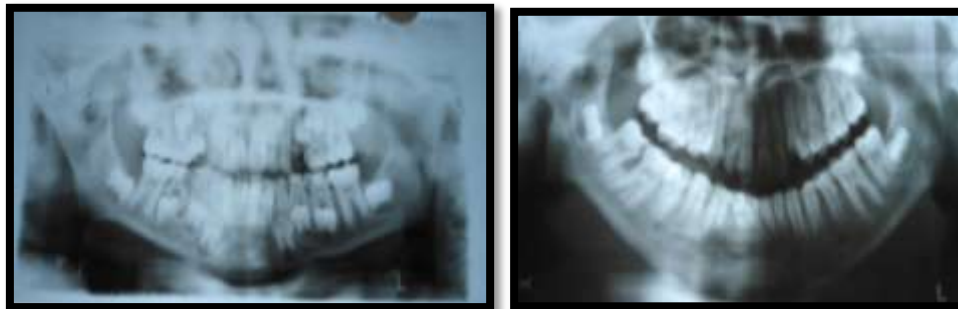
affected side, mandibular retrognathism (Figure No. 1). On palpating temporomandibular joint (extraauricular- pretragus region), mild tenderness was present on right preauricular region and on intraauricular palpation no joint movement was present, antegonial notch was palpated on right side of angle of mandible.



Figure No. 1- To Show Mandibular Deviation and Retrusion

Based on the history and clinical examination ankylosis involving right side of temporomandibular joint was given as provisional diagnosis with a differential diagnosis of impaction (3rd molar), fracture (condylar) and oculoauricular vertebral syndrome. Patient was advised with various radiographic investigations such as orthopantomograph (Figure No: 2), transcranial view, transorbital view and transpharyngeal view – all radiological views revealed a diffuse radiopacity in right side of joint leading to loss of temporomandibular space and on haematological investigations all the values were within normal limits. Ophthalmic evaluation was done but no problem was detected but on ENT evaluation slight loss of hearing was present on right side of ear. On the basis of patient's history and various investigation bony ankylosis involving right temporomandibular joint was given final diagnosis. Patient was referred to department of oral surgery for required surgery (Figure No: 3). Patient was recalled after 1 week of surgery and evident mouth opening was noticed (Figure No: 4).

Figure No: 2- To Show Orthopantomograph



(a) 1 year back - 1st surgery

b) After 1 year - 2nd surgery



Figure No: 3- To Show Gap Arthroplasty



Figure No: 4- To Show post operative mouth opening

DISCUSSION AND REVIEW OF LITERATURE

Temporomandibular joint ankylosis is also known as “stiff joint” because of the absence of mobility and jaw function in the joint. The word “ankylosis” was derived from greek word which means “fusion of the body parts”. It has high incidence in India with reported age distribution ranges from 2-63 years. TMJ ankylosis is acquired condition in most of cases. Patient suffering from TMJ ankylosis will normally complaint of facial asymmetry, reduced mouth opening, inability to eat, talk and even eat properly. The main problem is of esthetics in case of female patients. There are two types of TMJ ankylosis which are as follows : unilateral and bilateral TMJ ankylosis. In the present article a case of unilateral bony ankylosis has been discussed.

There are various classifications of Temporomandibular joint ankylosis given by different authors; Sugwan and Gundlach classified ankylosis as a false and true -the “*true*” ankylosis is characterized by fibrous union of condyle to the temporal fossa compromising its normal function. Ankylosis and a “*false*” ankylosis is characterized by the union of the coronoid process with the temporal or zygomatic bones [2]. Sawhney did a follow up study of 70 patients of TMJ bony ankylosis in which he treated them by placing costochondral grafts. In the same article he also reviewed various classification of TMJ ankylosis which can be Type I- presence of fibroadhesions at the condyle; Type II – bone fusion with condyle remodeling and an intact medial pole; Type III – mandibular ramus union with the zygomatic arch and medial pole intact; and Type IV – total union of the mandibular ramus with the zygomatic arch [3].

Although various treatment modalities are present for treating TMJ ankylosis, which can be , surgery, physiotherapy, orthodontic and orthognathic surgery. But in most cases a gap

arthroplasty and condylectomy is preferred as done in present case[4].

From the various types of gap arthroplasty as a surgical treatment- a comparison of gap arthroplasty and interpositional gap arthroplasty as a surgical treatment of the temporomandibular joint ankylosis was done in 48 patients in which range of mouth opening was evaluated in all patients before , during and one year after surgery with the mean age of the study population was 19.5 ± 8.9 years. Of those, 21 (41%) were male and 27 (59%) were female and from 48 patients, 26 patients (54.2%) interpositional gap arthroplasty was accomplished and for 22 patients (45.8%) gap arthropasty was performed. The Mean range of mouth opening before and after surgery was 10.3 ± 3.9 and 33.9 ± 5.2 in interpositional gap arthroplasty, 8.7 ± 4.9 and 32.1 ± 7.8 in gap arthropasty, respectively. The results showed that the range of mouth opening significantly increases after ankylosis surgery in both surgical approaches but improvement was less in interpositional gap arthroplasty. In regards to recurrence, results of interpositional gap arthroplasty were superior to gap arthropasty[5]. In present case report also gap arthroplasty was done and post operative results were good.

Radiographic investigations are also necessary for diagnosing TMJ ankylosis. However many radiographic techniques can be used to confirm ankylosis which include OPG, computer tomography and extraoral radiographs like: transcranial, transorbital and transpharyngeal views can also be used as diagnostic measures[6].

RECENT TRENDS

However, the free CCG has gained popularity in the past 2 decades. A clinical study was conducted on costochondral grafts in the treatment of temporomandibular joint ankylosis to note the potential of the costochondral graft (CCGs) as an interpositional material and to see whether they

induce normal growth potential in the reconstructed mandible. In the first 4 cases, arthroplasty was done using a bur. The bony mass was detached of its muscle attachments and removed. In the 5th case, condylectomy was performed. In all cases, this was followed by immediate costochondral grafting. The articular reconstruction with costochondral grafts for the treatment of TMJ ankylosis is efficient in relation to post- operative maximal incisal opening, recurrence and articular function[7].

CONCLUSION

TMJ ankylosis is one of the most commonly seen abnormalities now a day which can be acquired or congenital. Its proper clinical features and differential diagnosis can lead to its proper treatment. So it is mandatory for dentist to know more and more about it.

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