Bilateral Ginglymoarthroidal joint anchyloses: A Case Report

Dr Roopika Handa[1], Dr Aiman Mahfooz[2], Dr Upender Malik[3], Dr Tanha Khan[4]
Post Graduate[2,4] Professor[1,3,]
Dept of Oral medicine and Radiology, Teerthanker Mahaveer Dental College and Research Centre, Moradabad Uttar Pradesh, India

Abstract

Temporomandibular joint disorders are commonly affecting 28% of population. Congenital Ginglymoarthroidal joint (TMJ) ankylosis is an atypical condition that presents on its own or soon after birth in the absence of acquired factors that could have contributed to the ankylosis such as infection and trauma. Patients usually notice this condition when it results in functional, aesthetics and psychological limitation. This paper highlights the clinical and radiographic features of this atypical TMJ bony ankylosis detected at later stage.

Keyword; Ginglymoarthroidal joint, ankylosis, intraarticular, extraarticular, TMJ.

Introduction:

TMJ ankylosis is a joint disorder, which has been described as the difficulty in opening the mouth. In Greek terminology ankylosis means 'stiff joint'. In this condition fibrous, osseous or fibro-osseous fusion between the mandible condyle and roof of mandibular fossa results in loss of normal rotational and translational movement. [1]

It is associated with various functional disabilities including compromised airway, verbal communication andchewing impairment, poor oral hygiene and caries along with aesthetics deformity due to disturbed growth of face and mandible. According to Neelima Malik ankylosis can be classified into true or false, extra auricular or intrauricular, fibrous or fibro osseous or bony, unilateral or bilateral and partial or complete.[2]

Whereas trauma is the most common etiology of TMJ ankylosis, it can also occur due to infection, rheumatoid arthritis and surgery. In some cases, it can manifest due to congenital and idiopathic factors.

First described by Burket in 1936 congenital TMJ ankylosis has been recognized as a separate condition to the other acquired forms. It is considered as an additional difficulty in the more complex and challenging condition of pediatric TMJ ankylosis. As in children growth period and developing dentition is involved, TMJ ankylosis can have physical as well as psychological effect. Underdeveloped mandible, asymmetry, speech alterations, limited chewing and poor oral hygiene are the various other effects. Early diagnosis and management to prevent alterations due to growth are the prerequisites.[3]

In this article we present one such case with a history representing congenital form and the need for a timely diagnosis.

Case Report

A 16-year-old male patient reported to the Oral medicine and Radiology department of Teerthanker Mahaveer dental college and research centre with a chief complaint of inability to open mouth since birth. According to the patient's father his condition was noticed at early childhood. Medical consultation was not sought until now, as there was no associated pain. The

patient was reportedly on soft diet and the food was inserted through natural front teeth space. He was born full term through normal parturition and has achieved normal growth. No past history of trauma or chronic infection to the ear, face and jaw was reported.

On extraoral examination the state of the patient appears malnourished with no deformity in other parts of the body. Craniofacial assessment revealed a normal head shape, symmetrical eyes and low set ears position. The patient exhibited a "bird-like" facial appearance with retrognathic mandible, facial asymmetry with pogonion deviated to the left side, double chin, and a relatively short neck. The patient was unable to open his mouth and palpation of the pre-auricular region revealed no lateral movement on both sides of the Temporomandibular joint(Fig.1).

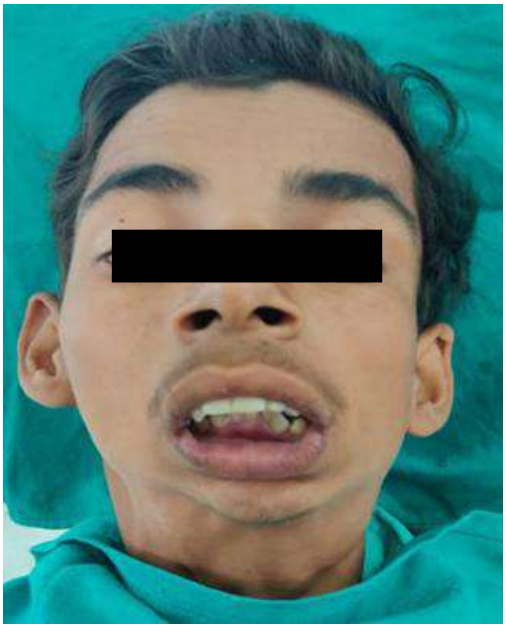

Fig.1 Inability to open mouth, "bird-like" facial appearance.

Discussion

TMJ ankylosis although occurs following trauma and infections, it can be rarely congenital. This case was reportedly since early childhood but the ankylosis activity could have started later as there were no retained deciduous. TAT Shaeran et al[3,1] described a similar case where the condition was noted in early childhood, but the absence of retained deciduous molars led them to suspect the ankylotic activity to have started around 7-9 years of age. According to them if the ankylosis was from an early age there should be presence of retained deciduous.

Intraoral examination revealed a permanent dentition stage with class II malocclusion. A mandibular midline shifts and proclined maxillary incisors with increased overjet were noticed. Cusp to Fossa relationship showed zero Maximal Incisal Opening (MIO) making it impossible to examine the tongue and lingual aspects of dentition.

The patient was subjected to panoramic radiography, which revealed a blending of left condyle with glenoid fossa and the condylar head was superimposed by bony mass. The right condyle was condensed tightly to the glenoid fossa, but the outline of the condylar head be left over as a visible separate form. The ramus height of the left side was comparatively smaller than the right side, prominent antigoneal notches were reported on both sides and other findings included horizontally impacted 37 and a root stump of 46. The structures of anterior region of mandible were not clearly visible as the patient's inability to open mouth resulted in a positional error leading to superimposition of cervical spine on anterior region (Fig 2).

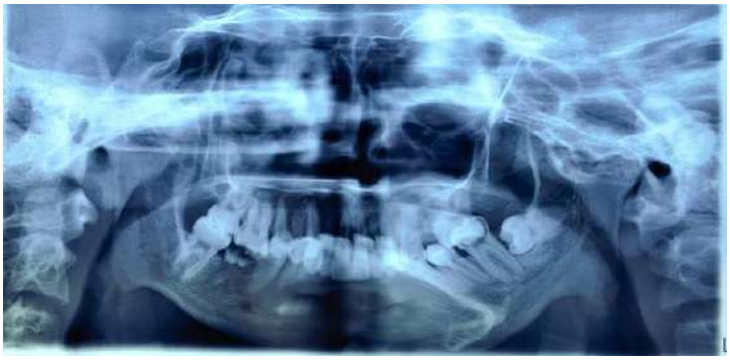

Fig .2Panoramic radiograph shows the right and left condyle condensed tightly to the glenoid fossa, and bilateral deep antigoneal notch.

On the basis of clinical and radiographic examination, a final diagnosis of bilateral TMJ ankylosis was given.

A Kamrowska[4] on the other hand described a case, which was exhibiting significant restriction in mouth opening since the age of 6 months, with no history of trauma or infection. She emphasized on the diagnosis of a congenital form if child has restricted mouth opening since birth but if developing with time other factors must be considered.

This is in concurrence with Tideman H[5], who stated that blows to condylar head in infant result in fragmentation of the articular surface, resulting in ankylosis. The failure to diagnose the

childhood injury and the tendency of involuntary mandible immobilization by the child also leads to ankylosis. [1,1]

Clinically the patient's face depicted lower face deformity with a typical bird-face appearance alongwith inability to open mouth and with no palpable joint movement. This is also characteristic of bony ankylosis as with fibrous ankylosis patients will have protrusive movement alongwith pain on forceful opening of mouth.[8]

There are various TMJ imaging modalities including conventional and advanced imaging. Conventional imaging is convenient and readily available but has its own limitations. In our case however because of poor socio-economic condition of the patient orthopantomography was done that revealed a bony mass superimposing the left condyle, thus indicating a bony ankylosis. This is in consideration with the characteristic radiographic feature of bony ankylosis. [8,1]

Various syndromes have been associated with TMJ ankylosis like Treacher Collin and Pierre Robin syndrome. A case of TMJ ankylosis has been reported in association with Carey Fineman Cheong et al[6] and Yew C et al[7] have each described case of isolated developmental abnormality of TMJ and TMJ ankylosis following septic arthritis of the knee, respectively.

Ziter syndrome also. Our case however had not exhibited any associated features of the syndromes. [9,10]

It is necessary to recognize true congenital TMJ ankylosis based on clinical and radiographic descriptions in detail so that any related syndromes can be established.[4,1] A timely intervention and detection plays a key role in management of TMJ ankylosis. [11]

CONCLUSION

Since TMJ ankylosis causes speech, feeding and altered facial esthetics it is a difficult condition to adapt by children and adolescents as it results in psychological disgrace. Hence, detailed and proper history of clinical, functional and radiographic findings are necessary in order to establish a proper diagnosis. Early diagnosis and appropriate treatment is thus essential in restoring normal functioning and balance of the dentofacial complex.

References

1. Jain G, Kumar S, Rana AS, Bansal V, Sharma P, Vikram A. Temporomandibular joint ankylosis: a review of 44 cases. Oral Maxillofac Surg. 2008;12(2):61-66. doi:10.1007/s10006-008-0103-y
2. Suragimath A, Suragimath G, Devendrappa SN. Temporomandibular joint ankylosis. J Indian Acad Oral Med Radiol 2016;28:334-6.
3. Tengku Shaeran TA, Abdul Ghani NK, Jim LM, Ahmad A, Samsudin AR. Ankylosis of Temporomandibular Joint: Surgical Management. Clin Surg. 2019; 4: 2380
4. Komorowska A. Congenital temporomandibular joint ankylosis--a case report. Eur J Orthod. 1997;19(3):243-248. doi:10.1093/ejo/19.3.243
5. Tideman H, Doddridge M 1987 Temporomandibular joint ankylosis. Australian Dental Journal 3: 171-177
6. Cheong RC, Kassam K, Eccles S, Hensher R. Congenital Temporomandibular Joint Ankylosis: Case Report and Literature Review. Case Rep Otolaryngol. 2016;1-4
7. Yew, Ching Ching& Rahman, Shaifulizan&Alam, Mohammad. (2015). Temporomandibular joint ankylosis in child: An unusual case with delayed surgical intervention. BMC Pediatrics. 15. 169. 10.1186/s12887-015-0495-4
8. Shetty P, Thomas A, Sowmya B. Diagnosis of temporomandibular joint (TMJ)ankylosis in children.J Indian Soc PedodPrev Dent 2014;32 266-70
9. Chang CC, Steinbacher DM. Treachercollins syndrome. *Semin Plast Surg*. 2012;26(2):83-90. doi:10.1055/s-0032-1320066
10. Pasetti M, Mazzoleni F, Novelli G, Iascone M, Bozetti A, Selicorni A Temporomandibular joint ankylosis as part of clinical spectrum of carey-Fineman zieter syndrome? Am . J Med Genet A.2016;170(8):219-2195.doi:10.1002/ajmg.a.37767
11. Gupta VK, Mehrotra D, Malhotra S, Kumar S,Agarwal GG, Pal US. An epidemiological study of temporomandibularjoint ankylosis. Natl J Maxillofac Surg 2012;3:25-30.

Corresponding Author:
Dr Roopika Handa
Professor
Dept of Oral medicine and Radiology, Teerthanker Mahaveer Dental College and Research Centre, Moradabad Uttar Pradesh, India
Email id: roopika77omr@gmail.com
Contact No.8950757357

How to cite this article:.Handa R, Mahfooz A, Malik U, Khan T. Bilateral Ginglymoarthroidal joint anchyloses: A Case Report. TMU J Dent. 2020;7(2):25-28.