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CASE REPORT

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Unilateral Fibrous ankylosis of the Temporomandibular Joint

Gaurav[1], Jayanthi K[2], Kamala R[3], Shivu[4]

House Surgeon[1]
Bangalore institute of Dental Sciences,
5/3, Hosur Road, Bangalore - 29.

Prof. & H.O.D[2]
Sr.Lecturer[3 & 4]
Dept. of Oral Medicine and Radiology
Bangalore institute of Dental Sciences,
5/3, Hosur Road, Bangalore - 29.

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ABSTRACT:

Ankylosis of the Temporomandibular joint (TMJ) is a chronic mandibular hypomobility and is one of the commonest TMJ disorders encountered in the patients.The present case is about the history of fourteen years old fibrous ankylosis of the condyle of the TMJ with its clinical and the radiological features and the treatment modalities.

Key words: Consolidation, deviation, atrophy, dark linear shadow

INTRODUCTION:

Ankylosis is also called "stiff joint". Ankylosis is a greek word which means "fusion of the body parts". There are various types of ankylosis, viz:

- True(intra articular)
- False(extra articular)
- Bony(true)
- Fibrous(false)
- Partial
- Complete

There are various etiologies related to the ankylosis of the temporomandibular joint which are discussed in the later sections of this article.[1, 2]

CASE REPORT:

A 19 years old patient by the name Ramya, reported to the Department of Oral medicine and radiology of our college complaining of lower face deformity and wanted to get esthetic corrections done.The most striking feature that could be noticed was gross lower facial deformity. On questioning, the patient revealed that she had noticed this deformity at a young age. Her parents revealed that she was born healthy from a normal delivery without any pre or post partum complications. There were no facial abnormalities till she was 5 years old. At this age she began to realize that the skin covering the lower face was getting deepened spontaneously. There was no history of trauma, burns or any other abnormality noticed at this site prior to the onset of this deformity. The deepening occurred at a very slow rate and has remained static. She had a restricted mouth opening as well.

There was no history of similar findings in the family and no history of genetic and contagious diseases. On physical examination, patient was moderately built and poorly nourished with normal gait and posture.

The extra oral examination (Fig. 1) revealed a leptoprosopic facial form, convex profile and a gross

Email for correspondence:
dr.gaurav.sunny@gmail.com

facial asymmetry on the left side of the face. The upper and middle thirds of the face appeared to be sunken when compared to the right. The left side of the forehead, temporal region appeared to be slightly flattened with prominent left malar process. The suborbital ridge appeared prominent and sharply inclined at an angle of 45 degrees to the ridge resulting in left orbit to appear smaller and rhomboidal in shape when compared to the right. Lips were incompetent due to proclination of upper front teeth. The upper lip was deviated to the left side and the angle of mouth was at a lower level when compared to the left. Nose appeared to be normal. There was a characteristic "bird face appearance" on the left side (Fig. 2). On palpation , the area was afibrile. The underlying bones such as frontal, temporal, zygoma and the temporal process of the zygomatic arch were palpable. The overlying soft tissue and muscle such as temporalis, masseter and the facial muscles hadundergone atrophy. The skin overlying this area was pinchable and movable except in the temporal region and in the area of depression noted on the lateral aspect of the lower third of the face. Bilateral lymph nodes were palpable, measuring about 1.5 x 1.5 cms on the right side and around 2x1. 5 cms on the left side, movable, firm in consistency and non tender on palpation.

On examination of the temporomandibular joint, left condylar process was not palpable. Patient had restricted mouth opening and the mandible deviated towards the left side on opening the mouth. Right TMJ had normal functions without any clicking or tenderness.

On intraoral examination, soft tissue aspect of labial, buccalmucosa, floor of the mouth, tongue, vestibule and hard palate appeared normal. Tongue had normal movements. Gingival enlargement was due to the presence of calculus and food debris around the teeth. Bleeding from the gingival sulcus was noticed on probing.

Hard tissue examination showed the presence of complete teeth component.

PROVISIONAL DIAGNOSIS: Unilateral(left) ankylosis of the temporomandibular joint.

Fig.1: Pre operative view of the patient.

Fig.2: Typical "Bird Face Appearance" as seen in TMJ ankylosis.

DIFFERENTIAL DIAGNOSIS:

- Oculoauricular vertebral syndrome.
- Post traumatic facial atrophy.

INVESTIGATIONS:

- Orthopantomograph
- Transcranial view
- Transorbital view
- Transpharyngeal view

OPTHALMIC EVALUATION:

Visual acquity testing did not reveal abnormalities in the left eye when compared to the right eye. No abnormalities detected in the eye movements. No strabismus or nystagmus noted.

ENT EVALUATION:

The ear appeared to be prominent and posteriorly placed on the left side. On auditory testing, slight conduction loss was present in the left ear.

RADIOGRAPHIC INTERPRETATIONS:

The OPG revealed: Hyoplastic condyles on the left side.

RADIOGRAPHIC DIAGNOSIS: Unilateral fibrous ankylosis of the temporomandibular joint on the left side.

FINAL DIAGNOSIS: Unilateral fibrous ankylosis of the temporomandibular joint on the left side.

DISCUSSION AND REVIEW OF LITERATURE:

Ankylosis or stiff joint is an abnormal immobility and consolidation of the joint. The classification of the TMJ Ankylosis has already been discussed in the introductory section of the article.

The **etiology** of the TMJ Ankylosis may be broadly categorized as false and true. The **false** etiologies include:myogenic, neurogenic, psychogenic, bone impingement, trauma and nepolastic diseases like osteochondroma. The **true** etiologies include: congenital, trauma,[2] inflammation of the joint, inflammation secondary to radiation therapy, loss of tissues with scarring and certain metastatic malignancies

It is seen primarily in a young age or between 1 to 10 years. The common symptoms include pain, trismus and reduced mouth opening. The incidence of **unilateral** ankylosis is more than that of the bilateral ankylosis. Assymmetry of the face with fullness on the affected side and flattening on the normal side is a characteristic feature of ankylosis. The patient's face is deviated towards the affected side. The chin too is retracted towards the affected side and it bypasses the midline. Cross bite is present due to deviation of mandible and shifting of the midline.

In **bilateral** ankylosis, typical "bird face appearance" is seen. The muscles of mastication undergo atrophy or fibrosis in long standing cases. Class 2 malocclusion, anterior openbite and micrognathia are also associated in most of the cases. [1]

RADIOGRAPHIC FEATURES:

Various types of radiographs can be taken in order to confirm the bony ankylosis of the TMJ, viz:

- Panoramic radiographs, which are most commonly used.
- Computerised Tomographic Scan(C T Scan)
- Extraoral radiographs like: Transcranial, Transorbital and Transpharyngeal views can also be used as diagnostic measures.

The joint spaces are completely or partially obliterated with dense sclerotic bone. A prominent antegonial notch can be seen on the affected side of the mandible. The greater part of the condyle may have been destroyed so that the sigmoid or the mandibular notch is approximated to the base of the skull. Neck of the condyle appears to be shortened. The mandibular notch is nearer to the zygomatic process than normal. A dark linear shadow is present in the middle of the new bone that represents the cartilage and the meniscus. There may be elongation of the coronoid process.

The atrophic or destructive changes in the cartilaginous component of the joint with loss of meniscus are the common laboratory findings which aid to confirm the diagnosis.[1,2]

The management protocol in cases of ankylosis includes mainly brisement force, condylectomy and the gap arthroplasty. In our case, the patient opted for the gap arthroplasty(Fig. 4). It was performed in the mandibular neck. Two parallel lines were cut, beginning in the depth of the sigmoid notch and carried downwards at an angle of 45 degrees at the posterior border of the ascending ramus.[1, 5, 6, 7]

Fig.4: Improvement in mouth opening one week after gap arthroplasty.

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