



Management of Bilateral Ankylosis with Temporalis flap - A Case Report

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Abstract

Temporomandibular joint (TMJ) is the most complex joint of facial skeleton. It is associated with several vital, sensory, muscular and bony attachments. Ankylosis also known as Ankylosis, it is a condition featured by stiff and pain in any specific joint. This condition has abnormal bone adhesion of affected joint, some disease or injury as a etiologic factors. Patients suffering from TMJ ankylosis encounters partial or the complete rigidity in joint movement which may be due to the inflammation of tendinous or muscular structures attached to the joint which ultimately results in restricted mouth opening causing difficulty in speech, chewing, airway due to facial deformity and hence diminishes the quality of life¹

Keywords: *Temporomandibular joint, Ankylosis, Bony fusion, Myofacial Flap.*

Introduction

Temporomandibular joint is a complex and well balanced Joint, having great level of anatomic precision. All the specialised and experienced surgeons face challenges since many years including otolaryngologists, and also maxillo facial surgeon. Its anatomy is said to be challenging because of its attachment to the various structures like bones, muscles as well as nerves like auriculo temporal nerve and facial nerve. The diseases of this joint are difficult to treat and the onset of disease plays a very important role in its management, as this is a growth centre for the growth of lower jaw.

Ankylosis is well defined as “inability to open the mouth due to either fibrous or bony union between the head of condyle and the glenoid fossa”. TMJ

ankylosis is been classifies in various ways- Kazanjian¹ classified it as ‘true’ or ‘false’ ankylosis. A condition resulting into a bony or fibrous type of adhesion in between the articular eminence and head of condyle is said to be true ankylosis whereas the resultant ankylosis is due to any pathology and not directly related to the joint. The incidence of TMJ ankylosis associated with trauma (31–98%), any systemic or local infection (10–49%), systemic disease (10%), neoplasm^{2,3}.

Case Report

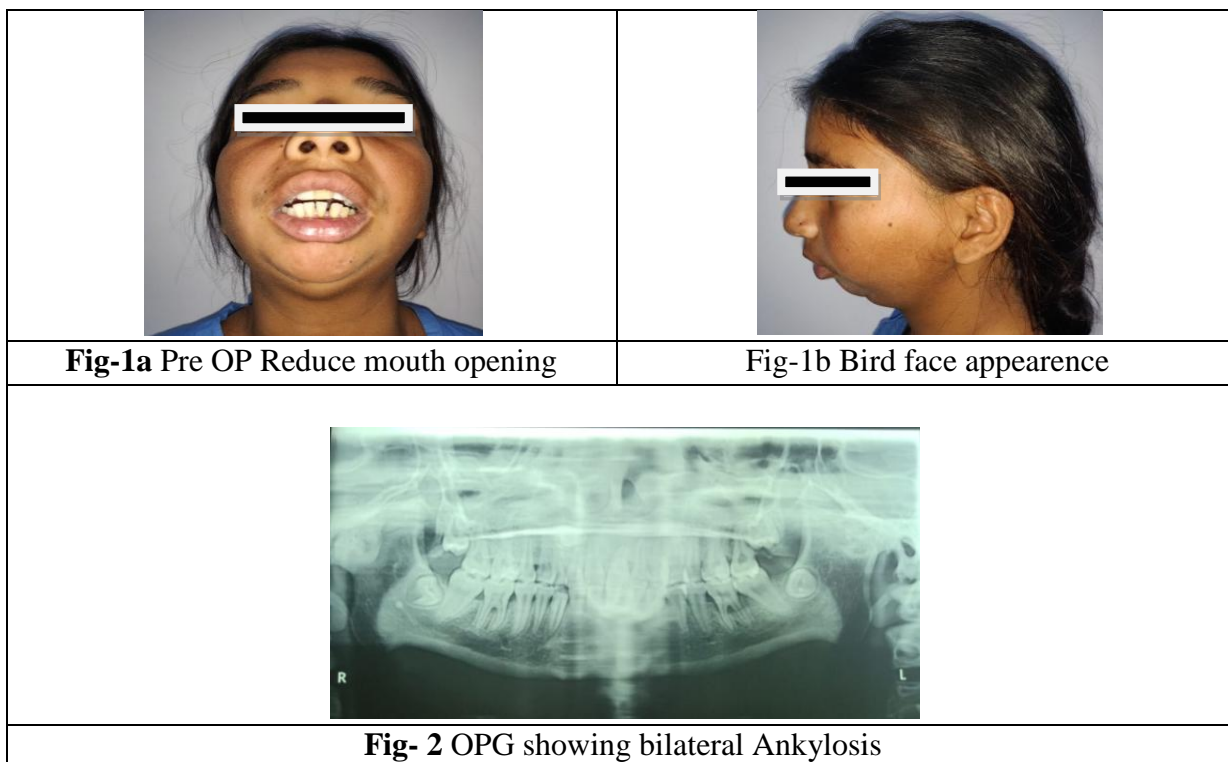
A 16-year-old female patient reported to our department with a chief complaint of inability to open the mouth. Patient had a history of fall from height 10 years back, and got no proper treatment for this. Patient noticed gradual decrease in mouth

opening, and mouth opening became almost nil over a period of time. The extra oral examination revealed no condylar movements, with no swelling in TMJ region the mandible was micrognathic with the reduced neck chin angle. Patient's interincisal opening was not more than 2 mm with incompetent lips (Fig. 1a, b) with bird face appearance.

Orthopantomogram (Fig. 2) reveals a radio opaque mass obliterating the TM joint space. Three dimensional CT scan (Fig. 3a, b) shows ankylotic mass with elongated coronoid process bilaterally. On the basis of clinical and radiological assessment it was diagnosed as posttraumatic, bilateral, complete bony TMJ ankylosis.

Surgery was done under general anaesthesia with nasotracheal intubation^{3,7}. Thoma incision (Fig. 4) was made and flap was raised. The site was properly dissected to reach the TMJ.⁴ after properly accessing the site the TM joint space was completely obliterated by bony mass (fig.5) The

bony mass was completely resected and removed bilaterally. The maximum interincisal opening attained after resection of mass was 20 mm. This was followed by bilateral coronoidectomy resulting in further improved inter incisal opening of more than 35mm (Fig-6). A temporalis myofascial flap (Fig. 7) was used as interpositional graft, extending approx. 8 cm from the zygomatic arch to give a proper length for lining the glenoid fossa. The graft was then sutured with 3-0 vicryl at the site on medial distal and transosteal tissues. A 1 week follow up was done for clinical and radiographic evaluation of patient (Fig-8). The jaw opening exercise and physiotherapy was started after 5 days post-operatively. Jaw opening exercises were performed with Heister^{5,8}. Initially patient was advised for soft diet, followed by solid diet gradually over next 5 weeks. The After 3 months the mouth opening was 25 mm (Fig-9) due to poor patient's compliance towards physiotherapy.



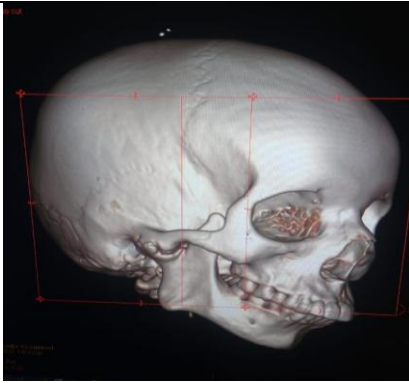


Fig-3a CT scan showing ankylotic mass with high coronoid growth (Right)

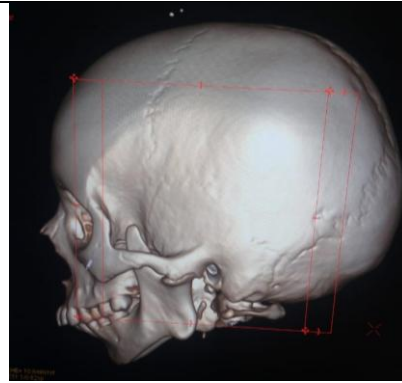


Fig-3b CT scan showing ankylotic mass with high coronoid growth (left)



Fig 4-Thoma incision was made & flap raised

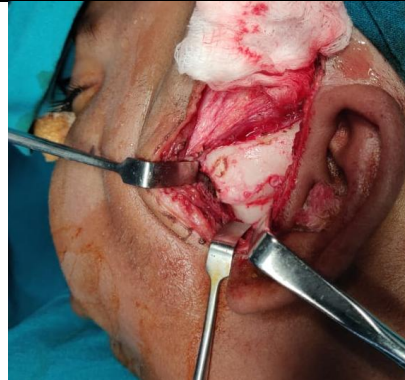


Fig-5 Ankylotic mass exposed



Fig-6 >35 mm mouth opening after bilateral coronoidectomy

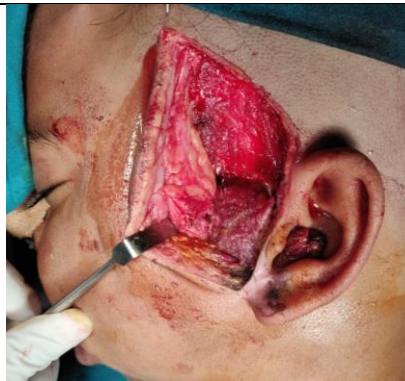


Fig-7 Temporalis Myofascial flap as a graft



Fig-8 Post OP OPG



Fig-9 Three month follow up mouth opening ~25 mm

Discussion

This case presents a female child of 16 year of tender age facing psychosocial as well as facial anomaly challenge. TMJ ankylosis results differently at different age as this joint is a growth centre of lower jaw- mandible. Any disturbance to this joint in growing age resulting in arrest growth of lower face causing facial deformity as well as big challenge for surgeons for not just as treatment aspect but also for complete anatomic and functional rehabilitation of patient⁶. This presented case face the same complication and is managed successfully by surgical removal of ankylosed mass followed by placement of graft at site and post-op physiotherapy as well. The optimum well desired results were achieved with the improved mouth opening and complete function rehabilitation of patient⁷. The desired significant improvement was achieved by proper treatment planning and a multidisciplinary approaches⁸ by different specialist with a well planned and a step wise approach in treatment of this case. Good results also help the patient to get over by the psychological stigma⁹.

Conclusion

This desired favourable outcome is achieved with a team work of different specialists including oral and maxillofacial surgeon, orthodontist, physiotherapist, speech therapist, psychiatrist, endodontist, and periodontist¹⁰. Biggest advantage of multidisciplinary team care was achieving the goal of functional efficiency, aesthetic harmony, structural stability and psychosocial competency and also captures the richness of experience in the lives of patient¹¹.

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