



Case Report

Technique of dual distraction for correction of unilateral temporomandibular joint ankylosis with facial asymmetry: A case report



Dhirendra Srivastava^{a,*}, Sarang Sharma^b, Sonal Mishra^a, Binita Srivastava^c

^a Department of Oral and Maxillofacial Surgery, ESIC Dental College and Hospital, Sector 15, Rohini, Delhi, India

^b Department of Conservative Dentistry and Endodontics, ESIC Dental College and Hospital, Sector 15, Rohini, Delhi, India

^c Department of Pedodontics and Preventive Dentistry, Santosh Dental College, Ghaziabad, India

ARTICLE INFO

Article history:

Received 22 January 2015

Received in revised form 24 January 2016

Accepted 19 February 2016

Available online 13 May 2016

Keywords:

Ankylosis

Arthroplasty

Distraction osteogenesis

Facial asymmetry

Temporomandibular joint disorders

ABSTRACT

Joint arthroplasty coupled with distraction osteogenesis is an attractive treatment option for correction of TMJ ankylosis associated with secondary mandibular deformity. Lately, advances in surgical techniques and equipment have greatly widened the horizon for application of distraction osteogenesis in correction of skeletal deformities. Despite the availability of several surgical techniques, treatments still continue to be challenging. Search for a technique that will reduce the frequency of complications while providing more predictable outcomes is still continuing. In the case report described here, interpositional gap arthroplasty using temporomyofascial flap and extra-oral distraction osteogenesis were combined in a single surgical operation to treat a young adult for unilateral TMJ ankylosis with mandibular deficiency. A modified distraction technique was employed wherein two extra-oral distractors were placed on the affected side to provide more effective and predictable distraction. Marked improvement in aesthetics, function and occlusion could be appreciated with the use of this modified technique.

© 2016 Asian AOMS, ASOMP, JSOP, JSOMS, JSOM, and JAMI. Published by Elsevier Ltd. All rights reserved. ☆

1. Introduction

Temporomandibular joint (TMJ) ankylosis is a structural condition characterized by osseous, fibrous or fibro-osseous fusion of the mandibular condyle to the base of skull resulting in partial/complete immobility of the joint [1]. Left untreated, TMJ ankylosis can precipitate several structural sequelae such as restricted mandibular growth resulting in retrognathic and deviated mandible, decrease in facial height, malaligned dentition and poor jaw neck definition. Besides facial disfigurement, patients may additionally encounter functional problems such as restricted airway, impaired speech, difficulty during mastication, poor oral hygiene and great psychological stress [1,2]. These factors combined can have an extreme negative impact on the psychosocial

development of the patient and hence should be treated at the earliest.

Treatment designed for patients suffering from combined TMJ ankylosis and skeletal deformity is aimed at restoring anatomic form and function, correcting occlusal and facial disharmony, promoting physiologic growth in the affected region as well as preventing readhesion [3]. Strategies undertaken for management are based on the objectives of (1) treating muscle trismus and restoring physiologic functions, achieved by surgical techniques such as excision of the ankylotic mass with/without placement of interpositional materials; or reconstructing the condyle-ramus unit after joint resection using autogenous bone grafts/total joint prosthesis and (2) achieving mandibular elongation/expansion for correction of skeletal deficiency by employing distraction osteogenesis (DO) or autoplasmic bony transplantation.

The sequence of joint arthroplasty and facial deformity correction is however, widely deliberated and debated. Traditionally, both these conditions have been treated independently; with some authors advocating the structural deformity to be corrected prior to definitive arthroplasty [4] while others advocating function to be a priority and hence the correction sequence to be reversed [5]. Simultaneous use of gap arthroplasty and distraction osteogenesis for treatment of TMJ ankylosis and micrognathia was for the first time proposed in literature in 1999 [6,7].

☆ Asian AOMS: Asian Association of Oral and Maxillofacial Surgeons; ASOMP: Asian Society of Oral and Maxillofacial Pathology; JSOP: Japanese Society of Oral Pathology; JSOMS: Japanese Society of Oral and Maxillofacial Surgeons; JSOM: Japanese Society of Oral Medicine; JAMI: Japanese Academy of Maxillofacial Implants.

* Corresponding author. Tel.: +91 11 27553099; fax: +91 11 27553099; mobile: +91 9650362363.

E-mail address: dsmmaxfax@gmail.com (D. Srivastava).

Combination of treatment strategies is considered beneficial particularly in reducing the number of surgical appointments; however, complications such as recurrence of joint ankylosis and open bite deformity may still be encountered. To provide simultaneous correction of structural deformity and functional restoration, while overcoming any possible recurrence of ankylosis either due to inadequate gap created during surgery or post-arthroplastic gap impingement secondary to distraction, a technique of dual distraction was devised. This solo technique employs (1) Distractor 'A' that fixes and maintains the gap created post-removal of osteomatous ankylosed mass; and if indicated may be activated for increasing the gap (2) Distractor 'B' which is used for correction of mandibular asymmetric deformity. Technique is simple and can also be used for correction of bilateral TMJ ankylosis.

2. Case report

An 18-year-old male patient reported to the Department of Oral and Maxillofacial Surgery seeking treatment for limited mouth opening and facial asymmetry. History revealed incidence of fall from height at the age of 12 years and a gradual reduction in mouth opening, inability to chew and deformity of face. Examination revealed the classical signs of unilateral TMJ ankylosis. Thorough medical history was taken to rule out any other contributing factor for TMJ ankylosis. Extra-orally, the patient had a convex profile. His chin and mandibular dental midline were deviated to the right. Micrognathia of the right mandibular body

and ramus was evident clinically (Fig. 1A). Mouth opening was restricted to 13 mm with an increased over jet of 5–6 mm (Fig. 1B and C). Posterior cross bite was seen on the right side with a minimal occlusal cant (Fig. 1D). Radiographic examination for the concerned problem included orthopantomogram, postero-anterior skull view, cephalometric view and contrast enhanced computed tomography scan (Fig. 2). Thorough evaluation revealed TMJ space to be obliterated with deformed irregular condyle and relative enlargement of coronoid process. Right mandibular ramus and body appeared hypoplastic with reduced vertical height of ramus, an accentuated mandibular notch and prominent angle of mandible resulting in facial deformity.

Combined surgical correction of TMJ ankylosis and mandibular deformity was planned using dual distraction technique. The patient was taken up for surgery under general anaesthesia. The ankylosed area was reached and exposed through Al-Kayat and Bramley incision. Approximately, 1.5 cm of ankylosed mass was meticulously and radically excised followed by smoothing of the cut surface of ramus. Interincisal mouth opening of 40 mm was confirmed on the operating table (Fig. 3A). Schanz pins of Distractor "A" were next fixed: one at the zygomatic arch and the other, one cm below the cut end of condylar neck keeping the distractor's vector parallel to posterior border of ramus.

Subsequently, mandibular angle region was exposed using intraoral vestibular incision. The mandible was osteotomized obliquely in the retromolar region with the cut extending posteriorly downwards from the upper border of mandible to its lower



Fig. 1. Facial photographs of the patient showing (A) deviated chin and dental midline and facial asymmetry (B, C) restricted mouth opening and (D) oral photograph showing large overjet and posterior crossbite on right side.

Download English Version:

<https://daneshyari.com/en/article/3160039>

Download Persian Version:

<https://daneshyari.com/article/3160039>

[Daneshyari.com](https://daneshyari.com)