

Mandibular Osteodistraction in Temporomandibular Joint Ankylosis

Ahmed O. Alyamani BDS, CAGS OMFS, Dipl ABOMS, DSc OMFS

Abstract

Introduction: Temporo-mandibular joint ankylosis is a common cause of acquired deformity.

Purpose: Surgical correction of the ankylosis only leaves the patient with external facial deformity. This study was done to evaluate the use of distraction osteogenesis in mandibular hypoplasia attributable to TMJ ankylosis and to present our protocol in surgical treatment with this relatively new therapeutic option.

Material and Methods: This study was done on seventeen patient with temporomandibular joint and mandibular deformity. Intra oral unidirectional bone born distractors were used in this study. Patient were categorized into three group; Group I underwent arthroplasty followed by distraction osteogenesis. Group II patients had simultaneous arthroplasty and distraction osteogenesis and Group III patient underwent distraction osteogenesis to relief upper airway obstruction followed by arthroplasty.

Results: All patient had a satisfactory mouth opening on follow-up and satisfactory correction of external facial appearance was achieved in all these patients. Some degree of malocclusion which were managed secondary by orthodontic treatment.

Conclusions: Distraction osteogenesis can be used as treatment to correct facial deformity in patient with temporomandibular joint ankylosis. Long term follow up of these patient is needed to decide whether secondary or even tertiary distraction may be required with further growth.

Keywords: Temporomandibular joint; Ankylosis; surgery; distraction osteogenesis.

Introduction

Temporomandibular Joint ankylosis refers to bony union or fibrous adhesions of the discs-condyl complex to temporal articular surface that restrict mandibular movements and result in loss of function [1].

The most frequent causes of TMJ ankylosis are trauma to the joint, infection and inadequate surgical treatment of the TMJ region [2].

The younger the patient at the time of damage, and the longer the period of ankylosis before treatment, the more severe will be the degree of the deformity with a significant deformity to the external facial appearance [3] (Figs 1).

The aims of treatment are the release joint ankylosis, achieve normal mandibular movement, avoid recurrence, achieve facial symmetry and good occlusion, favor normal growth and to relieve respiratory obstruction if present. These aims are reached through interceptive surgery and orthodontics [4].

Many surgical techniques for treatment have been described so far. However, none of them achieved uniformly successful results.

Mandibular elongation by distraction osteogenesis has gained acceptance and has been used widely

during the past 10 years by oral and maxillofacial surgeons. Several author have designed different types of distraction appliances and have provided their experience [5].

Therefore, distraction osteogenesis opens new perspective in the interceptive surgery in cases of facial growth disturbance due to condylor injury, particularly in growing patient.

The aims of this study were to show the use of distraction osteogenesis in mandibular hypoplasia attributable to temporomandibular joint ankylosis and to present, formulate and discuss our experience with a protocol for correction of post ankylotic deformity by distraction osteogenesis of the mandible specific to patients needs.

Materials and Methods

From september of 2003 to november of 2005, total of seventeen patients presented with post temporomandibular joint ankylosis deforming were treated in the Department of Maxillofacial Surgery at the Faculty of Dentistry, King Abdul Aziz University Hospital and King Fahad General Hospital, Jeddah, Saudi Arabia.

According to the patient presentation and needs patients were placed in one of the following

Assistant Professor and Chairman of Oral and Maxillofacial Rehabilitation Department,
Head of Oral and Maxillofacial Surgery
Faculty of Dentistry, King Abdulaziz University
Jeddah, Saudi arabia.