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Unilateral Ankylosis of Left Tmj Management:- A Case Report

Medical Science

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DR.VARGHESE MANI	DEAN, MAR BASELIOS DENTAL COLLEGE, KOTHAMANGALAM KERALA-686691
DR.SANKAR VINOD V	HOD, DEPT OF ORAL AND MAXILLOFACIAL SURGERY, MAR BASELIOS DENTAL COLLEGE, KOTHAMANGALAM, KERALA-686691
DR.ARUN GEORGE	READER, DEPT OF ORAL AND MAXILLOFACIAL SURGERY, MAR BASELIOS DENTAL COLLEGE , KOTHAMANGALAM, KERALA -686691
DR.AABU VARGHESE	PG-FINAL YEAR, DEPT OF ORAL AND MAXILLOFACIAL SURGERY MAR BASELIOS DENTAL COLLEGE , KOTHAMANGALAM, KERALA 686691
DR.PAUL STEAPHEN	PG, DEPT OF ORAL AND MAXILLOFACIAL SURGERY, MAR BASELIOS DENTAL COLLEGE, KOTHAMANGALAM, KERALA-686691
DR.NINAN THOMAS	READER, DEPT OF ORAL AND MAXILLOFACIAL SURGERY, MAR BASELIOS DENTAL COLLEGE, KOTHAMANGALAM, KERALA-686691

ABSTRACT

This case report describes the multiphase treatment of a 28-year-old female patient having unilateral left TMJ ankylosis with vertical maxillary excess and mandibular retrognathism. She was also suffering from difficulty in mouth opening, mastication, speech and oral hygiene. Ankylotic mass resection and release, temporalis myofacial flap interposition and extended lateral sliding genioplasty was done in the initial stage. Lefort I osteotomy, extended genioplasty and placement of med pore implants were done in later stage. Psychological counselling were also performed from time to time. There was considerable improvement of facial esthetics, disfigurement, impaired functions and psychosocial disability at the end of treatment.

Introduction

The temporomandibular joint (TMJ) is a synovial joint which allows mastication and speech. TMJ is formed between the articular fossa above and mandibular condyle below. Ankylosis can be defined as a loss of movement of the joint resulting from fusion of bones with in the joint or calcification of the ligaments[5]. Tempromandibular joint ankylosis results in restricted mouth opening due to a fibrous or bony (non-neoplastic) union of the mandibular head to the glenoid fossa[17].Fusion of bones causes pain in the joint and severely affects the movement of jaw. Patients with calcification or bone fusion usually need surgery to permit jaw movement. Infections, prolonged maxillomandibular fixation, trauma, degenerative joint disease and prior gap arthroplasty[1,] were the common etiologies which often leads to TMJ ankylosis. rheumatoid Arthritis, Sickle Cell Anaemia and Fibrodysplasia Ossificans Progressiva were the unusual causes which can lead to TMJ ankylosis. Gap Arthroplasty is a surgical option which is still preferred by some and the standard procedure is interpositional surgery. Auricular cartilage; buccal fat pad; costal cartilage; costochondral graft; dermis fat graft; full-thickness skin graft; hydroxyapatite; coronoid process; sternoclavicular graft; temporalis fascia; temporalis muscle flap or a titanium prosthesis,silastic materials, etc were commonly used in interpositional surgery[6,17,18].

1. Three basic techniques are currently employed in the treatment of TMJ ankylosis[12]
2. Gap arthroplasty: is the resectioning of the osseous mass between the articular cavity and the mandibular ramus and the resection field is left empty[5,17,19]
3. Interpositional arthroplasty: following gap arthroplasty, the interpositional placement of biological (temporal muscle, skin or auricular cartilage, etc.) or non-biological (acrylic and silastic) materials are placed in the operation space[7,13,14,17,18,19,20] .

Joint reconstruction: following resectioning of the osseous mass reconstruction is done by autogenic costochondral graft or total joint prosthesis.[11,16,17,19,20].

For resolving functional, esthetic, psychological, or social problems a team approach is essential. Case report of an adult female is presented here. The treatment was carried out in a stagewise protocol. Unilateral ankylosis of left TMJ was managed by ankylotic mass resection and release and followed by temperomyofacial flap interposition[4,15]with extended lateral sliding genioplasty(1st stage)[2], later followed by Lefort I osteotomy, extended genioplasty and placement of med pore implants in 2nd stage.

2. Case Report

2.1. Diagnosis and Treatment Plan

The treatment was undertaken at the Oral and Maxillo-Facial Surgery, Unit of Mar Baselios Dental College.A 28-year-old female patient reported with the chief complaint of difficulty in opening mouth, restricted movement of jaws, and poor esthetics. She had dental and skeletal class- II malocclusion with vertical maxillary excess and mandibular retrognathism. Thorough clinical and radiographic and Cone Beam Computerised Tomography examination revealed the unilateral bony TMJ ankylosis of the left side. She had a convex profile, severely retrognathic mandible, absence of chin button, and bimaxillary protrusion (Figure 1). Intraoral examination shows complete restriction of mouth opening. Upper and lower anterior teeth were malaligned and proclined. Some of the anterior and posterior teeth were

carious and had calculus. She had also the complaints of the snoring and difficulty in sleeping when lying down.

Stage wise treatment plan [12]:

(1)Surgery: In the initial stage there is gap arthroplasty which is followed by temporalis myofascial flap interpositioning[4,5,17,19] through preauricular approach and extended lateral sliding genioplasty was done(1st stage)[2].

(2) Physiotherapy[5,17,19],

(3)Restoration of carious teeth and oral hygiene measures to once adequate mouth opening is attained.

(4)Lefort I osteotomy, extended genioplasty and placement of med pore implants in the later stage (2nd stage).

(5) Speech and functional therapy,

(6)Psychological counselling[19]

(5) speech and functional therapy,

Fig 1.a Fig 1.b Fig 1c

Fig 1.d Fig 1.e

2.2. Treatment Progress

(1)The surgery was performed under general anesthesia. The preauricular approach was used for exposure and identification of the site of ankylosis and gap arthroplasty[5,18.19] was done. Aggressive excision of the fibrous and/or bony mass was then carried out with a round bur and chisel until adequate mandibular movement was achieved. Then recontouring of glenoid fossa was done as necessary. Temporalis myofascial flap was interpositioned successfully[7,18,19]. Extended lateral sliding genioplasty[2] was also done.

(2)Physiotherapy:extensive physiotherapy was advised and usually carried out in restoring normal TMJ function following surgery. Lips, tongue and masticatory muscle exercises were recommended to increase mobility and mouth opening. Chewing exercise was advised on a small rubber tube to stimulate normal mastication.3.5 cm range of mouth opening was achieved and which was maintained satisfactorily after surgery.(fig:2).

(3)Restorative and oral hygiene measures: once adequate mouth opening was achieved, all the carious teeth were restored and proper prophylactic oral hygiene measures was accomplished.

(4) Lefort I osteotomy,extended genioplasty and placement of med pore implants was done in 2nd stage : Chin advanced 8 mm, and fixation was performed with titanium plate.(fig:3).

(5)Speech and functional therapy: to enhance the self-esteem in this patient speech and functional therapy was prepared right from the beginning of treatment[17,19] .

(6)Psychological counselling : psychometric tests were carried out.Standardized psychometric questionnaires that have been developed, validated, and used by social scientist and psychologist were used in various stages of treatment

Fig:2a Fig:2b Fig:2c

Figure 2a, 2b and 2c: 3 months after surgery mouth opening increased up to 4 cm

3. Result

Profile was improved from retrognathic to orthognathic.The mouth opening was increased up to 3.5 cm (Figure 3),and the treatment showed favorable results in terms of esthetics and function.More over it profoundly made positive influences on the psychological development, self-esteem, and self-confidence of the patient.

Fig:3a,3b before Lefort 1 AMO and genioplasty

Figure 3c,3d; after Lefort 1 AMO and genioplasty

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