Management Of Tmj Ankylosis- Review

Dr.Prakash¹,Dr.N.P.Prabhu²,Dr.Shanmugapriyan³,Dr.Tharani⁴

Department – Oral and Maxillofacial surgery
Sreebalaji dental college and hospital
Pallikaranai, Chennai – 100
Mail.id:pmht1703@gmail.com

Abstract: Ankylosis means “stiff joints” in Greek. Ankylosis of the Tmj is an intracapsular union of the disc condylar complex to the temporal articular surface that restrict and mandibular movement. Ankylosis may be due to fibrous/bony adhesion between condyle/disc/glenoid fossa and articular eminence that causes inability to open the mouth beyond 5mm of the interincisal opening due to fusion of the head of the condyle with articular eminence. The management of the ankylosis is to remove the ankylosis mass and create a gap for the free movement of the jaw and to restore the normal esthetic and functional activity. Key word: condylectomy, gap arthroplasty, interpositional arthroplasty, ankylosis

Introduction:

Ankylosis is the development of significant or complete limitation of movement of the Tmj by bone or fibrous tissue. The basic surgical objective are to stabilized jaw movement and jaw function to prevent relapse and archive normal growth and occlusion. Ankylosis of Tmj is an extremely disabling affliction that cause problem in mastication, digestion, speech, appearance and hygiene. It also has an impact on the psychological development of the patient and can place his/her life in jeopardy at any time because of the inability to open the mouth. 86% of cases are due to traumatic ankylosis and the other factors involved in the ankylosis are genetic, neoplasia. Ankylosis release is the oldest form of Tmj surgery that evolved from procedure during the 19th century which consist of osteoarthectomy, condylectomy and gap arthroplasty. Arthroplasty without interpositional requires a gap of 1-2cm to prevent re-ankylosis with this large gap, there is a loss of ramus height no support for the rotation mandible.

Material and methods: over 43 article where selected for review following a comprehensive search of the literature from pubmed central.

Etiopathology of Tmj ankylosis:

1) Trauma: Congenital, at birth (forceps delivery), haemorrhosis, condylar fracture, glenoid fracture 2) Infection 3) Genetic factors 4) Other factors

Pathophysiology:

Markey et al² done an experiment in donkey with a ankylosis with difficulty in mouth opening. Hohl et al subjective that the mandibular condylar fracture in monkey with various modalities bone grafting, mechanical, chemical damages etc. Soung kim histological and immunohistochemical staining in the condylar hyperplasia with rich hyaline cartilage, positive for BMP4 and spread in BMP-2.

Discussion: the management of the ankylosis is depends on stages of ankylosis, associated deformity and age of presentation. The aim of the ankylosis surgery is to remove the ankylosis mass and gap help in mobilization of the mandible. to restore the normal form and function.
Treatment planning should be in the order of 1) surgery: condylectomy/gap arthroplasty/interpositional arthroplasty 2) physiotherapy-to activate the mobilized joint, 3) orthognathic surgery-genioplasty for the esthetic corrections, 4) speech and the functional therapy, 5) psychological counselling. In surgery: esmarch in 1851 was the first to give the surgical method for tmj ankylosis. In 1850-1860 condylectomy and arthroplasty. Arthroplasty was performed using myofacial flap in 1913 by Murphy blair in 1928, the procedure includes arthroplasty of joint cavity, arthroplasty of joint cavity with free ccg, arthroplasty of joint cavity with temporals flap insertion in newly created joint cavity accompanied by a simultaneous upper and lower condylectomy on the affected side, distraction of ramus and body on the affected side, reconstruction using alloplastic prosthetic arthroscopic laser assisted preparation of articular surface, post operative radiotherapy, bilateral arthroplasty. Mosset al in 1968 surgical treatment should not be postponed based on the moss functional matrix theory the surgery and functional restoration of both the bones and neighbouring soft tissue release the growth potential of the mandible and prevent further development of deformity.

**Kabans protocol-1990**

1) aggressive total excision of the mass it carried out after adequate exposure and identification of the caries site. 2) coronoidectomy+myotomy on the affected side to eliminate temporalis muscles restriction. 3) contralateral coronoidectomy done if 1 & 2 donot result on maximal mouth opening of 35mm. 4) lining of the joint with temporalis muscle fasciaor disc will be of salvages. 5) ramal height reconstruction with cegand rigid fixation. 6) early post operative mobilization and aggressive physio for 6-12 months. 7) regular follow up 8) growth incompetency orthognathic surgery. In 1816 John howship gives a vivid report of the natural history of suppurative arthritis of the jaw joint leading to ankylosis. Christopher heath in 1884 described the progress of suppuration of the middle ear lead to sequestration of the mandibular condylar via auditory meatus causing ankylosis balir vp 1913 give the operative treatment of ankylosis of mandible the preariculay incision used today are essential modification of the blair curvilinear or inverted “l” incision. Rongetti 1954 described a modification of lemperts endural osteosclerosis for approaching the tmj. Murphy in 1914 reported the use of temporalis muscle fascia for interpositional after the lysis of temporomandibular ankylosis ridson in 1934 applied free flap muscle sfor interpositional in tmj muscles for interpositional tmj ankylosis contraction is among the strongest tissue in the body. Kanzanjian in 1938 was the first to clarify ankylosis in to true or false ankylosis this classification is further modified on the basis of histopathologal variation into fibrous or bony, fibro-osseous and cartilaginous by miller. The first dermis disc replacement was given by geograde X and altany f in 1957 the tissue survive and forms an effective interpositional scar. Davidson 1959 gives the fate of autogenous cartilage graft as an interpositional material. Topazian in 1966 compared gap arthroplasty with interpositional arthroplasty in the treatment of tmj ankylosis in 15 patients of the fifteen who had gap arthroplasty 8 had a recurrence of 5 patients who had interpositional arthroplasty none had a recurrence within 7 month past operatively. Kennett in 1973 suggested ccg for the interpositional arthroplasty in tmj ankylosis. In 1987 obweger h l o hadjianghlov coined the bird face deformities to describe the micrognathic mandible and receding chin. P. C. Salins in 2000 gives the new technique osteotomy performed inferior to the base of ankylosic mass and autogenic tissue used as interpositional to prevent reankylosis. Dimitroulis g 2007 investigate the radiological fate of dermis fat graft within temporomandibular joint using mri there was no statistically significant different in the size of graft fat tissue growth and maintainence show the negative effects by intermittent compressive force within the joint space itself. Andrew m. Felstead and Peter j. Revinton 2011. Says the surgical management of tmj ankylosis in ankylosing spondylitis. SM Balaji in 2003 reported favorable result using modified temporomandibular anchor age in a case of ankylosis with 6 years of follow up. Tmf is placed between the bony stump and the distal border and sutured to the submandibular fissure cushion and elasticity and increased bulk of the flap can be prevented of post op open bite caused by shortening of the ramus after removal of the ankylosis mass.

**Conclusion:** the success of the surgical management in ankylosis is by increase in mouth opening and in the normal contour of the face in mouth opening without any deviation. The supportive therapy is highly required in tmj ankylosis for normal structural and functional activity.
Reference:


