

Case Report

Challenges in Rehabilitation of long standing ankylosis of temporo mandibular joint: A case report of a 65 years old lady

Abhay Taranath, Manish Bhagania, Deepika Pai*, Satpal Singh, Amit and Ambika Pradeep

Department of Oral and Maxillofacial Surgery, Manipal College of Dental Sciences, Manipal 576104

*Corresponding Author

Dr. Deepika Pai
Associate Professor
Department of Pedodontics
Manipal College of Dental Sciences, Manipal.576104
E-mail: Deepikapai0479@gmail.com

Abstract

Temporomandibular joint ankylosis commonly occurs as a result of trauma to the face resulting in fusion of the temporal bone to condyle of the mandible. Immediate and appropriate care of facial fractures can minimise the risk of development of ankylosis. We report a case of TMJ ankylosis in a 65 year old lady with complaint of inability to open the mouth since 44 years. The lack of appropriate treatment at the time of trauma led to TMJ ankylosis and its sequelae for 44 years. The ankylosis was surgically managed followed by aggressive physiotherapy. Surgeries in geriatric patient need to outweigh benefit over risk. The article describes challenges posed in rehabilitation of this patient.

Keywords:

Temporomandibular joint,
Ankylosis,
Rehabilitation,
Mouthopening,
Surgical management.

1. Introduction

Temporomandibular (TMJ) ankylosis is an intracapsular union of the disc-condyle complex to the temporal articular surface that restricts mandibular movements, including the fibrous adhesions or bony fusion between condyle, disc, glenoid fossa, and eminence [1]. The most common causes for TMJ ankylosis are falls, road traffic accidents and sport injuries, including play accidents. TMJ ankylosis can also be caused by local or systemic infection such as otitis media and mastoiditis, tuberculosis, scarlet fever and gonorrhoea, (10-49%), Paget's disease, pseudohypoparathyroidism and psoriasis, sickle cell anemia, fibrodysplasia ossificans progressiva. MJ ankylosis is commonly acquired developmental disorder of face in children. With most patients (70.0%) being in the 10-15 years' age group (mean age was 11.1 years \pm 3.34) [2,3]. Here we report a case of 65 year old lady who sustained trauma at the age of 21 years of age, the outcome of such injury and challenges faced in rehabilitation of this patient.

2. Case report

We report a case of a 65 year old woman who presented with a history of at the age 21 years following which the mouth opening gradually reduced and became 0 within months. Patient didn't seek any treatment at that time because of her financial status and now she was bought to us by her son for providing treatment. Since then she has been unable to open her mouth for 44 years. She had difficulty in speech and was on restricted diet for long years. On examination there was no facial asymmetry or growth deficiency. Old scar was present on chin region. There was nil mouth opening and no condylar movements were palpable. (Figure 1).

Figure 1. Mouth opening and condylar movements

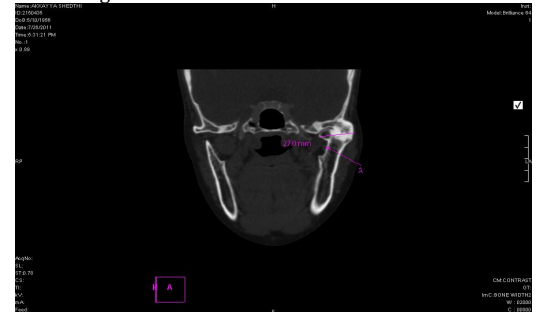


There was a bony hard mass palpable in left TMJ region. Intraorally upper and lower anterior teeth were missing with poor oral hygiene. The Missing upper anteriors were helpful in taking liquid and semisolid food. OPG, PA mandible and contrast enhanced CT scan with 3-D reconstruction was done which revealed pure bony ankylosis of left TMJ, fibrous ankylosis with deformed right condyle due to disuse, bilateral elongated coronoid processes (Figure 2&3).

Figure 2. CT scan with 3-D reconstruction



Figure 3. CT scan with 3-D reconstruction



Her systemic evaluation revealed she was fit for surgical intervention under general anaesthesia. She was taken up for bilateral gap arthroplasty with temporalis muscle interpositioning. Securing the airway was the biggest challenge in this case as there was no possibility of direct laryngoscopy because of nil mouth opening, therefore awake

fiberoptic nasotracheal intubation was carried out for securing the airway. The left TMJ ankylosis was approached first through Alkayat-Bramley approach. A preauricular incision with question mark shaped temporal extension was given and skin, subcutaneous tissue and temporoparietal fascia were incised sharply to reach the glistening white superficial layer of deep temporal fascia. Blunt dissection was done on this fascia to expose the TMJ and later temporalis muscle for interpositioning. An imaginary line drawn from upper point of tragus to a point 2cm above the fronto-zygomatic suture was the limit of anterior direction because anterior to this line the frontal and temporal branch of facial nerves crosses the Zygomatic arch in the same plane. An incision at 45 degree to the zygomatic arch and 2 cm above it was given on superficial layer of deep temporal fascia and dissection was carried inferiorly deep to this layer to reach the Zygomatic arch.

Periosteal incision was given on superior border of arch and entire width of arch along with ankylotic mass was exposed. Superior osteotomy was kept at the level of inferior border of arch and inferior osteotomy was marked at 1.5 cm below the superior cut. The entire ankylotic mass in its entire later-medial width and with elongated coronoid attached anteriorly was removed in toto. At this stage only 5 mm of mouth opening was achieved. The right side also was exposed in the same manner as left (Following Kaban, Parrot and Fissure protocol). The right condyle was found to be deformed, osteoporotic with fibrous adhesion obliterating the joint space. Right coronoid was also elongated with atrophic temporalis muscle. Right side condylectomy and coronoidectomy was performed and this time a mouth opening of 33 mm was achieved.

After achieving satisfactory mouth opening the native disc was secured with sutures in right joint space to act as interpositional material. On left side 5cm long and 2 cm wide temporalis muscle flap was elevated from posterior fibers interposed in the joint space and secured by suturing it to the remnants of lateral pterygoid on the medial aspect of remaining ramus. Vacuum drains were secured in bilateral surgical sites and layered closure of incision was done. Patient sustained the procedure well, an immediate postoperative mouth opening of 34 mm was achieved (Figure 4) and was kept hospitalized for 10 days to provide postoperative care, antibiotics, analgesics and nutrition. Daily physiotherapy in form of aggressive mouth opening exercise with use of acrylic mouth opening devices (Figure 5), guiding elastic therapy for mandibular closure and ultrasound therapy for muscle relaxation and pain relief were all started from third postoperative day.

Figure 4. Postoperative mouth opening



Figure 5. Acrylic mouth opening devices



3. Discussion

As a result of inability in opening the mouth the patient had poor oral hygiene and had not enjoyed a meal for a long time of 44years. This patient remained unoperated for many years, this could have been possible a result of a poor appreciation of the role of surgery in the management of TMJ ankylosis by the dentist who managed the initial trauma at 21 years of her age or lack of proper referral to centres delivering such surgical care. However this case demonstrates the evidence of fate of untreated cases of facial injuries resulting in Temporomandibular joint ankylosis. TMJ ankylosis results in trismus or inability to open the mouth. This can not only cause difficulty in intake of food and thus affects general well being but also cause difficulty in speech and maintenance of oral hygiene. This affects the personality of the individual and reflects greatly on one's social life. [4,5]

In today world the infectious reason for TMJ ankylosis has become nearly obsolete but one cannot rule out the probability of sustaining trauma to face. Particularly any trauma to the chin translates the impact to the condyles. [6,7] It is hypothesized that the formation of an intra-articular hematoma with subsequent scarring and new bone formation is the common precipitant. This new bone formed causes hypomobility and is termed as fibrous ankylosis if left untreated over time a fibrous ankylosis transforms into bony ankylosis resulting in total closure of mouth [8].

In this case the Kaban's protocol was followed in managing the bilateral TMJ ankylosis. The temporalis myofascial flap was interposed to prevent reankylosis. [9] Active physiotherapy and guarded watchful follow-up in initial stages is minimal invasive modality of management as long as any evidence of bony union is not seen. But immediate surgery can halt progression of a fibrous ankylosis to total joint ankylosis and its sequelae.

4. Conclusion

In Geriatric patient the systemic conditions like hypertension, diabetes and arthritis especially in women are commonly known factors that contraindicate a surgical option. While surgery is often considered as the last option in cases of TMJ ankylosis, surgery is the definitive treatment option. However risk should outweigh the benefits of surgical intervention. Surgical management in TMJ ankylosis results in adequate mouth opening but active and vigorous physiotherapy in both immediate and later post operative days can only prevent reankylosis.

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