OSTEOARTHRITIS OF THE TEMPOROMANDIBULAR JOINT — A CASE REPORT

T Lalitha, N Kannan, Rajendra Patil, Sreenivasulu Pattipati

ABSTRACT

Temporomandibular joint disorders are heterogeneous group of diseases that cause progressive joint degeneration leading to chronic pain and reduced quality of life. The present paper report the management of osteoarthritis of the Temporomandibular joint in a 62 year old female patient by high condylotomy.

Key words: Temporomandibular joint; Osteoarthritis; Condylotomy

Introduction

Osteoarthritis (OA) of Temporomandibular joint (TMJ) is regarded as a degenerative change of the joint cartilage and sub-chondral bone. It is characterized by architectural changes in bone and degeneration of the synovial tissues causing pain/dysfunction in functional movements of the jaw. The symptom complex is not the same from one patient to another, it can exist in a quiet state until it is set off by an array of events or it can be painful from the start. With osteoarthritis, the TMJ can be the first joint to be affected and the last joint to be affected in rheumatoid arthritis. Disease progresses as hypertrophic repair of joint tissues resulting in thicker cartilage, which lasts for decades without any symptoms. Later reduction in the thickness of cartilage resulting vertical defects referred as fibrillation. Under this the cartilage lacks resistance and joint movements resulting bone remodelling and hypertrophy causing formation of sub-chondral bone cysts. The present paper report the management of osteoarthritis of the Temporomandibular joint in a 62 year old female patient by high condylotomy.

Case Report

A 65 years old female patient reported with a chief complaint of pain in the right ear region and difficulty in chewing food for last one year. Pain was initially dull, continuous and opening of the mouth gradually decreased to the present state. Her medical history revealed that she was a known hypertensive since 6 years and under medication. No history of pain in other joints. On extra oral examination face appeared to be symmetrical, inter-incisal distance was reduced to 7mm with the deflection towards right side. Protrusive movement was restricted. Tenderness was elicited in both the joints. Examination of the right TMJ revealed crepitus upon auscultation. On intra oral examination the posterior teeth were missing in the upper jaw and right lower jaw. Based on the age, history and the clinical findings a provisional diagnosis of Degenerative joint disease of TMJ was considered. Panoramic Radiographs revealed decreased inter articular distance and flattening of the articular eminence (Figure 1). Computed tomography with 2D coronal and sagittal reconstructions revealed narrowing of left and right TM joint space and presence of osteophytes over the condylar process (Figure 2). Patient was subjected to routine blood investigation and her complete haemogram revealed WBC (7,000ccm) count and ESR (15mm/hr). On correlating clinical and radiological findings a final diagnosis of osteoarthritis of the right TMJ was given. Our goal in treating this patient was to decrease joint pain, and masticatory muscle contraction, increasing the joint function and preventing disability.

Patient was prescribed NSAIDS and muscle relaxants to control the reflex masticatory muscle co contraction and pain. Patient was recalled after a month, and a single dose of intra articular corticosteroid injection was given to improve function. The protocol for joint injection was performed according to technique described by Bjørnland et al. Patient returned with local inflammation, erythema, swelling and fever. She was prescribed with anti-inflammatory drugs to control the same. Patient was recalled for the surgery after 30 days. High condylotomy, shaving of osteophytes with smoothening of right condylar head was performed under GA with aseptic precautions. Patient was advised physiotherapy, after a week mouth opening was increased from 7mm to 31mm with reduction in pain and inflammation. The increased mouth opening allowed restoration of the functionality, a better feeding and as a result a better quality of life. With post surgical physiotherapy and regular follow-up for 18 months there was no recurrence.

Discussion

Aging is not thought to cause osteoarthritis, but a combination of forceful repetitive function (bruxism) or missing teeth, disc displacement and alterations in synovial fluid of TMJ may predispose osteoarthritis in the elderly individual. Osteoarthritis may be asymptomatic or shows symptoms of pain over the affected condyle, limitation of mandibular opening, crepitus, and a feeling of stiffness. The most common complaints are pain and tenderness of the joint and masticatory muscles, muscle fatigue, stiffness, difficulty in opening the mouth and diminished range of movements. Pain in response to palpation of the joint capsule is one of the signs of TMJ osteoarthritis. Crepitation developed during joint movements secondary to cartilage loss and direct friction or rubbing against bone are one of the diagnostic criteria of osteoarthritis. Palpation is more effective than auscultation in detecting crepitation.

Various imaging modalities like orthopantomogram, trans-cranial, trans-pharyngeal, conventional tomography, computed tomography are considered to view the various changes in TMJ and diagnosis of osteoarthritis / osteoarthrosis.
logically osteoarthritis appears as loss of cortex/erosions over the condyle or temporal component. In due course of time there is bony proliferations. Osteophytes that may break off and lie within the joint space.\textsuperscript{6,10} Radiological studies of osteoarthritis indicate 40% incidence in patients around 40 years of age - a figure that practically reaches 80% by 60 to 70 years of age. Globally, more than 50% of the general population shows signs of osteoarthritis, though only 30% of these cases become symptomatic with a strong female preponderance (female to male ratio about 3:1).\textsuperscript{10} Treatment always begins with patient education, rest to the joint, physical therapy, which includes jaw exercises. Heat therapy is also advised. Finally non-opioid analgesics like NSAIDs are helpful. Use of Intra-articular injections of Corticosteroids/ High molecular weight Sodium hyaluronate reduces the pain and improves function in patients with TMJ pain alone compared to patients with both TMJ and myofascial pain. However the side effects such as progression of an existing disease, condylar resorption has been recorded. Minimal invasive procedures like arthroscopy, arthrocentesis (Injection of Hyaluronic acid at the end of the articular lavage which improves joint lubrication there by joint stabilization) are recommended. Finally invasive surgical procedures like arthroplasty, autogenous hemiarthroplasty, alloplastic hemiarthroplasty and osteotomy are also the various treatments.\textsuperscript{6, 11}

In chronic cases deviation of mandible towards the affected side, which is in contrast of facial palsy where there is deviation towards the opposite side. Radiologically osteoarthritis appears as flattening of articular surfaces, osteophyte formation, presence of Ely cysts (Radiolucent areas with irregular margins of varying density deep to the articulating surfaces).\textsuperscript{7}

Initially pharmacologic approaches to TMJ osteoarthritis includes NSAIDs but there is a need for sustained release agents that effectively reduce pain which have minimal systemic side effects, enabling long-term administration without the disastrous ectopic effects seen with NSAIDs like Rofecoxib. Minimal invasive procedures like intra-articular injections of either steroids or hyaluronic acid, arthrocentesis, arthroscopic surgery. However use of these agents remains controversial in light of decades of mixed reports of intra-articular injections either accelerating TMJ destruction or triggering regeneration. Consequently current pain reduction techniques are effective in accelerating TMJ destruction or triggering regeneration. Consequent current pain reduction techniques are effective in the early stages of the disease, but fail to alleviate the severe, chronic pain caused by advanced joint degeneration. Surgical approaches like Arthroplasty, Osteotomy, Autogenous /Alloplastic joint reconstruction can be done.\textsuperscript{12}

Whereas in our present case there is complication of facial swelling, erythema with intra articular steroid injection, surgical intervention of high condylyotomy was performed. Shaving of osteophytes with smoothing of right condylyar head resulted increased mouth opening allowed restoration of the functionality, a better feeding as a result a better quality of life. With post surgical physiotherapy and regular follow up for 18 months there was no recurrence.

Conclusion
TMJ Osteoarthritis is a degenerative joint disorder that causes progressive damage to the fibro cartilaginous TMJ disc, mandibular condyle and synovial tissue. As the TMJ is the first joint to be affected, the dentist especially the oral physician has the opportunity to make a unique contribution in early identification of affected individuals and preventing its progression to other joints.

Acknowledgement
Authors acknowledge the Oral and Maxillofacial surgery team for their surgical support.

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References
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How to cite this article

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Source of Support: Nil
Conflict of Interest: None Declared