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Anterior Disc Derangement Of Tmj With Reduction: A Case Report

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Abstract:
Temporomandibular joint disorders (TMD) affect a wide range of musculoskeletal systems and temporomandibular joint (TMJ). Amongst these TMDs, Anterior disc derangement (ADD) is more commonly seen nowadays within young patients. Non-invasive and conservative methods along with physical therapy, medications, counselling, behaviour management are the most commonly used techniques for treating Anterior disc derangement. Other treatment modalities include low level laser therapy, ultrasonography, dry needling, botulinum toxin injections etc. Occlusal splint is one of the widely used treatment modality which have a good success rate according to various studies. In our case, we have used soft mandibular splint technique which has shown good results thereby emphasizing its role and importance in treating ADDs.

Keywords: *Temporomandibular joint (TMJ), temporomandibular joint disorder (TMD), anterior disc derangement (ADD).*

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I. Background:

Temporomandibular joint (TMJ) and associated musculoskeletal systems are affected by a wide range of illnesses collectively referred to as "temporomandibular disorders" (TMD). A disease known as TMJ disc displacement is typified by the articular disc's misalignment with respect to the mandibular condyle and the articular fossa. About 41% of TMD patients had disc displacement. TMJ Based on the Research Diagnostic Criteria for TMD (RDC/TMD), there are three categories for internal derangement: disc displacement with reduction, disc displacement without reduction, and limited mouth opening with or without disc displacement. The most common kind is called anterior disc displacement with reduction (ADDwR), which is defined by a shift that happens during mouth closure and a reduction of the disc to its normal relationship with the glenoid fossa and mandibular condyle that is visible during mouth opening. Disc displacement impairs the TMJ's regular operation and may result in discomfort, a reduction in mandibular movement, and poor mastication. A dislodged disc may make a clicking or popping sound as the mouth opens and closes (a reciprocal click). Reduced mouth opening has been identified as one of the clinical features of ADDwR. This is typically followed by a mandibular deviation to the affected side until a pop or click (reduction) takes place. For patients with ADDwR, the main goals of treatment are to lessen discomfort, improve mandibular range of motion (MRM), reestablish chewing function, and improve patients' overall quality of life. There are minimally invasive and invasive irreversible procedures as well as non-invasive reversible procedures available as treatment alternatives. Conservative therapy should be the initial course of treatment to reduce the possibility of postoperative side effects, even though surgical techniques may be beneficial in some circumstances. Conservative treatments include low-level laser therapy (LLLT), stability splints (SS), repositioning splints, thermal and coolant therapy, and behavioural therapy (BT). Based on their intended use, occlusal splints fall into two categories: stabilizing splints and repositioning splints. Occlusal splint therapy seeks to improve masticatory performance, eliminate disc interference, reposition the articular disc between the mandibular condyle and the articular fossa, lessen TMJ pain and noise, and recapture the displaced disc. Although occlusal splints come in a variety of forms and have been used to treat temporomandibular disorders (TMD), there is still considerable debate regarding their design, appropriate wear,

and mode of operation. There have been evaluations of several splint designs for the treatment of disc displacement [1].

II. Case Presentation:

A 23-year-old male patient came to Department of Oral Medicine and Radiology with a chief complaint of clicking in right side of TMJ for the last 2 months. He first experienced the clicking sound while yawning 2 months back. There was no history of pain at that time so, he did not visit any medical practitioner regarding his complaint. Then after one month, he experienced lock-jaw which lasted for approximately one minute. The patient opened his mouth forcefully with his own hands. Patient was not having any pain in the TMJ region at that time too. But for the last 8 days, patient started experiencing pain in the TMJ. The pain was intermittent, dull aching, radiating type which initiated on mastication and then got relieved on its own. The patient then visited a private practitioner the next day for the pain. The private practitioner prescribed him analgesics as told by the patient. The patient was having no relevant documents regarding the prescription. But there was no relief in pain according to the patient.

On further asking, patient gives history of stress. He also gives history of developing the habit of clenching his teeth while in stress. He also had habit of unilateral sleeping and unilateral food chewing, both on the right side. There was no history of trauma, no history of morning stiffness, no history of odontogenic pain and no history of similar pain in the past in the same region or anywhere else in the oral cavity.

Fig.1. Facial symmetry

On extraoral examination, his face was bilaterally symmetrical with no signs of swelling or any discharge. On palpation, bilaterally asynchronous condylar movements were palpable with clicking sound heard in right side of TMJ while opening mouth. Deviation could be clearly seen towards right side while opening his mouth. His right masseter and right lateral pterygoid muscles were tender on palpation. His maximum mouth opening was reduced dueto pain. His intraoral examination shows no dental abnormalities.

Fig.2. Intraoral examination

Fig.3. Maximum mouth opening during first visit

So, he was advised MRI- TMJ and was prescribed Tab Myospas Forte BD for 5 days. He was counselled regarding stress management and was also advised restricted mouth opening, alternate hot and cold fomentation, bilateral chewing and sleeping and soft bland diet. Patient was then recalled after 5 days along with the MRI reports. His MRI reports were suggestive of anterior dislocation of articular disc of right TMJ with recapture of disc in open mouth sequence. The patient was examined and was asked for his pain for which he mentioned slight relief in pain.

Fig.4. MRI: Right TMJ

So, on the basis of these findings, we came with a final diagnosis of anterior disc derangement with reduction. There was a thorough discussion regarding this case and his treatment plan and finally it was decided to give occlusal splints to patient as it is non-invasive and conservative method. The patient's maxillary and mandibular impressions were taken and patient was given Tab Myospas Forte and was recalled after 3 days. When the patient visited again after 3 days, he was given the mandibular soft splints to wear along with all the necessary instructions. The patient was then recalled after 15 days. When the patient revisited after 15 days, he gave history of complete resolution of pain. His clicking was also resolved. He gave the same history of complete resolution of the pain and clicking again after 15 days. So, he was advised to discontinue the use of the soft splints. The patient was then kept on follow up on every month for 6 months and even after 6 months, there was no history of pain and clicking. Also, the maximum mouth opening of the patient was increased.

Fig.5. Occlusal mandibular soft splint fabrication

Fig.6. Mandibular soft splint placement

Fig.7. A. Maximum mouth opening after 15 days. B. Maximum mouth opening after 1 month.

III. Discussion:

Patients with TMD frequently have pain in the masticatory muscles, the TMJ region, and other associated musculoskeletal structures in the head and neck region. They also frequently have restricted mandibular motions. TMDs are more common in younger age groups and in college going students due to stress as one of the main etiological factors. In our case as well, we found that the patient was quite young and was having stress related to academics.

Although the patient was given symptomatic treatment without any radiographic investigations, but there was no relief in his symptoms. So, when the patient visited us, we thoroughly examined him and advised him MRI- TMJ region. His MRI was suggestive of anterior dislocation of articular disc of right TMJ with recapture of disc in open mouth sequence.

As there was no relief in his symptoms even after taking medications, we designed a comprehensive treatment plan for this patient which included counselling regarding stress management, alternate hot and cold fomentation, bilateral chewing and sleeping, soft bland diet and restricted mouth opening along with soft mandibular occlusal splint. Our patient showed significant improvement in symptoms in just two weeks which was highly commendable. Occlusal splint was selected as treatment of choice in this case in conjunction with medications because the medications were alone not working. Also, occlusal splints reduce tension, decrease muscle activity, provide occlusal stability, even distribution of strain, muscular symmetry and protect TMJ discs from dysfunctional stress.

TMDs are the conditions which requires multidisciplinary treatment approach. So, as a clinician we need to thoroughly acquire the patient's history, his symptoms and radiographic findings before planning any treatment. Our first aim should be to eliminate the etiological factors followed by medications and adjunct non-invasive treatment modalities like occlusal splints as used in our case. Other treatment modalities include physiotherapy, TENS, Ultrasound and laser therapy.

IV. Conclusion:

It was wise to use soft occlusal splint therapy in this instance in order to completely and successfully treat this TMD. This instance had an incredibly positive outcome; six months after the treatment, the patient reported 100% improvement.

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