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Prosthodontic Management of Tempormandibular Joint Disc Displacement Without Reduction: A Case Report

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I. Introduction:

The temporomandibular joint (TMJ) is the most active joint in the body as it needs to open and close up to 2000 times or more per day to account for a full day's worth of chewing, talking, breathing, swallowing, yawning, and snoring. The jaws, cervical spine, occlusion, alignment of the teeth are integrally related, and dysfunction in one of these regions may lead to a temporomandibular joint (TMDS) disorder, which is a term used to describe a variety of clinical disorders resulting in jaw pain or dysfunction.[1,2] The two most common masticatory problems (other then odontalgia) that present in dental office are

1. Masticatory muscle disorder
2. Intra-capsular joint disorders

According to "Okeson"[1] seven keys to diagnose case are, a) History, b)Mandibular restriction, c)Mandibular interference, d)acute malocclusion, e)loading of joint, f)functional manipulation, g)diagnostic anesthetic blockade. The symptoms of TMDS can include headache about the vertex and occiput, tinnitus, pain about the ear, impaired hearing and pain about the tongue. These conditions are characterized by pain in the muscles of mastication, the temporomandibular joint or both.

The management comprises of either a conservative (reversible) therapy such as patient counseling, prescribed medications, physical therapy, selective grinding, transcutaneous electrical nerve stimulation (TENS) and various appliances or a non conservative (irreversible therapy) such as condylotomy, meniscectomy, disectomy, arthroscopy, arthrocenthesis and reconstruction. Recently certain modalities such as yoga have also been tried to relieve the TMD sign and symptoms. Milano et al[10] analyzed the prevalence of disc displacement and deformations using magnetic resonance images of symptomatic TMDS. Anterior disc displacement with reduction (ADDWR) and anterior disc displacement without reduction (ADDWoR) were the most common types of TMD.

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Case Report: A 33 year old married female presented with chief complain of dull aching pain and clicking sounds in right and left ear area in front of external auditory meatus on opening and closing mouth,sometimes difficulty in closing jaw since 5months and uneasiness in area of muscle of mastication.. No history of any systematic disease. History of past dental treatment regarding root canal treatment followed by full cast crown before 6 months, class 1 amalgam restoration present in lower right 2nd molar and left 2nd molar before 1 year. Patient had noticed these kind of events started after one jerky wide yawning event in past.

on extra oral palpation muscles tenderness were noticed in front of both TMJ area. on intra oral examination(Fig.6,7,8),high points were noticed and removed on full cast crown present on rct treated left 1st molar region as seen in OPG(Fig.1). No other caries present in mouth. No periodontal problem was seen. No sign of bruxism. angles class 1 malocclusion present on right and left side, cross bite present in right & left 2nd molar region, anterior teeth crowding present. Normal mouth opening[6] present with no deviation. on TMJ examination clicking sound was present on both right and left TMJ area. Patient had some difficulty on closure sometimes. No history of trauma. Patient had some emotional stress and financial stress. Based on these findings we decided to go for OPG(Fig.1) AND MRI(Fig.2,3,4,5) evaluation. OPG findings are normal,no changes in condyle shape or morphology. On MRI finding disc displacement without reduction in open & close mouth views WAS observed. Final diagnosis was anterior disc displacement without reduction(ADDWoR) based on symptoms and RDC criteria.[3,6]

TREATMENT:

1. Stress relaxation therapy[11] e.g meditation and yoga
2. Advised not to open wide for few weeks and placed on soft diet
3. NSAIDS with Muscle relaxants (Tab.Dan MR 2 TIMES) for 5 days
4. Stabilization (Hard Heat cure Acrylic Resin) splint therapy with help of facebow transfer and mounting on Hanau Wide-Vue articulator.The splint was given for 8 hours a day , for 4 weeks.[4](Fig.9,10,11,12)
5. Follow up after 4 weeks

II. Results:

After 4weeks follow up there was no pain in TMJ area. No tenderness in TMJ area. No difficulty in closure but clicking (normal) sound was present**.**

Figure 1(OPG)

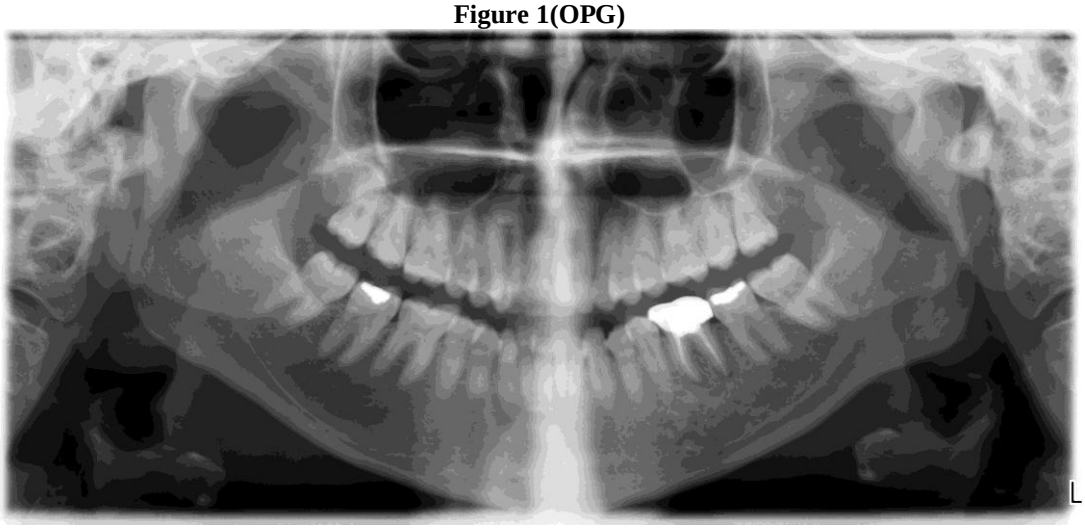

Figure 2(Right side TMJ MRI, open mouth view)

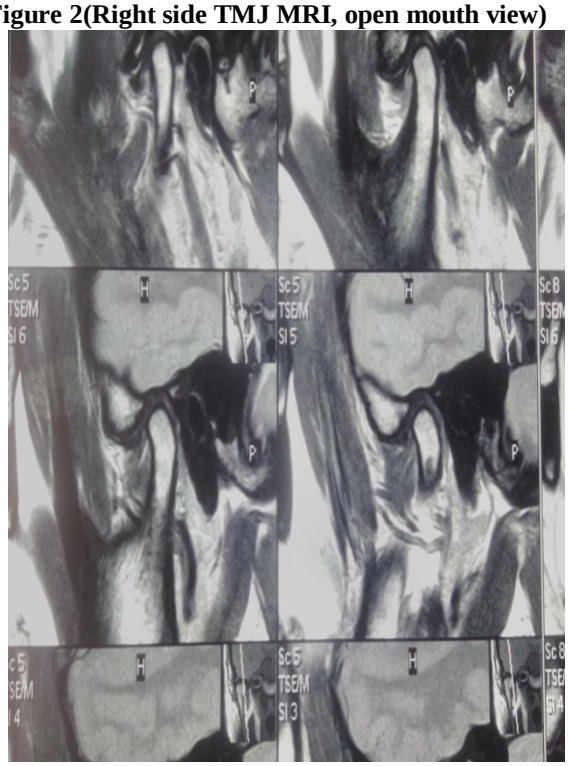

Figure 3(right side TMJ MRI close mouth view)

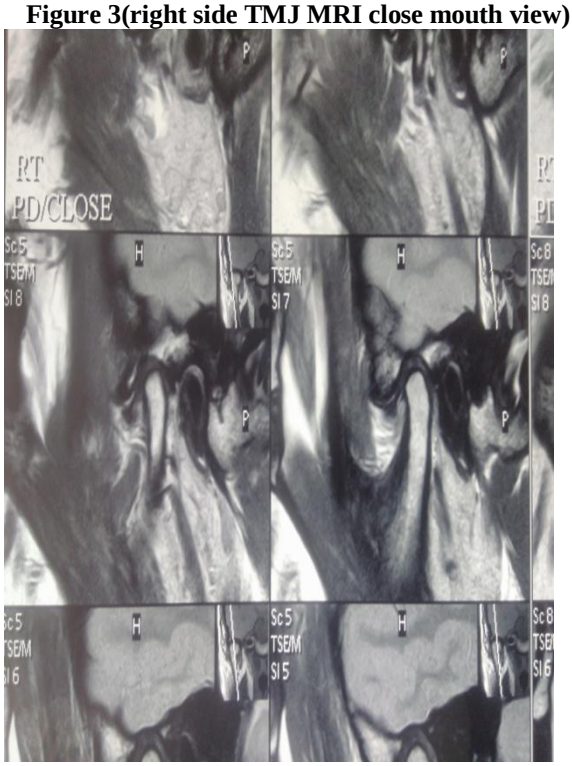

Figure 4(left side TMJ MRI, open mouth view)

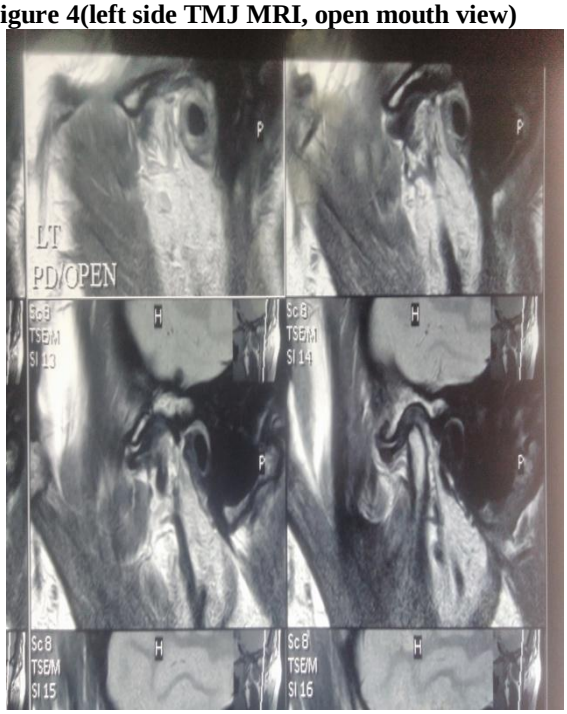

Figure 5(left side TMJ MRI close mouth view)

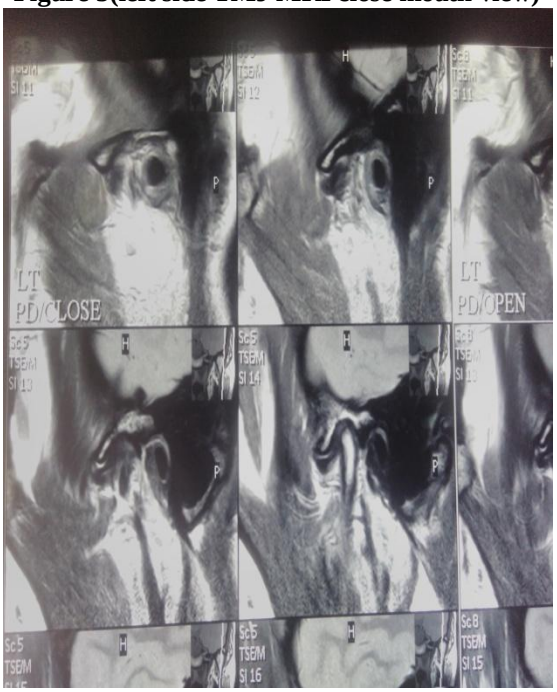

Figure 6(pre op right side occlusion)

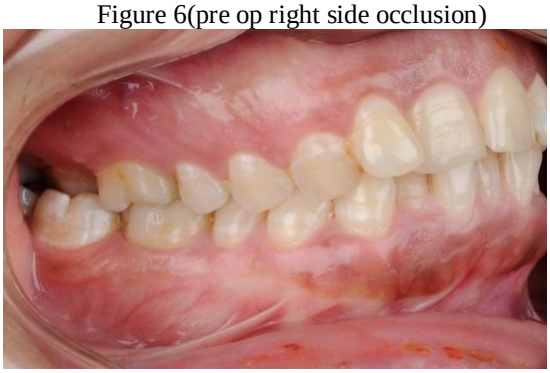

Figure 7(occlusion from front side)

Figure 8(pre op left side occlusion)

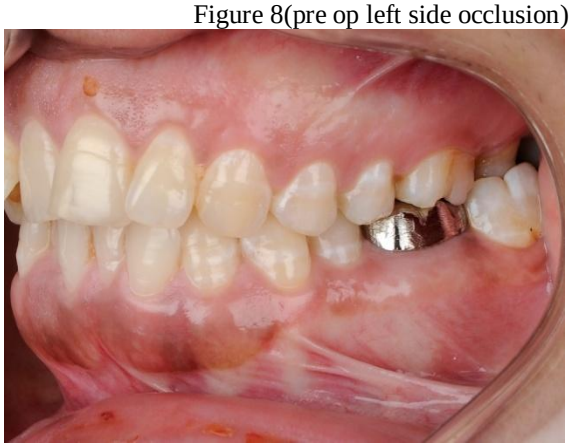

Figure 9(face bow transfer)

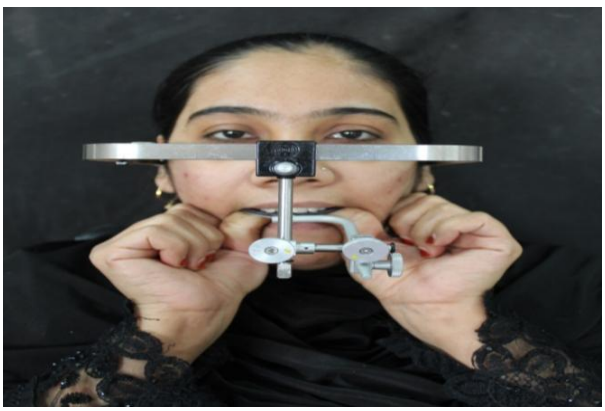

Figure 10(anterior splint for CR record)

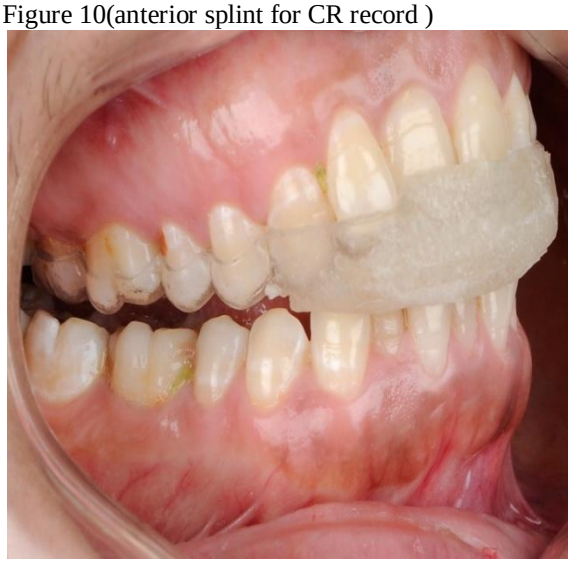

Figure 11(Mounting on semi adjustable articulator)

Figure 12(stabilization splint made up of heat cure acrylic resin)

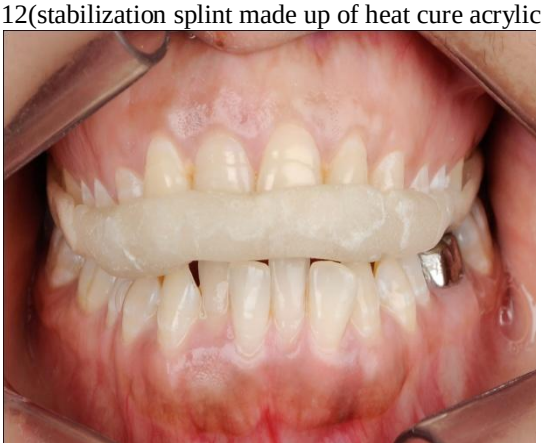

Figure 13(centric and eccentric interferences marked)

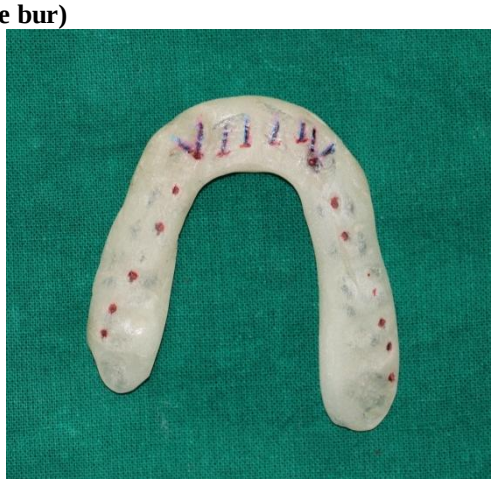

Figure 14(interferences removed with round carbide bur)

Figure 15(left lateral view without interferences)

Figure 16(right lateral view without interferences)

III. Discussion:

Treating TMD is challenging for every dentist as it can be multifactorial etiological origin. Accurate diagnosis related to disc disorder is very crucial. Once the diagnosis is confirmed splint selection is still debate topic but according to OKESON and DAWSON one should start with the most conservative splint therapy. Occlusion also plays the determinant role in treating myofacial pain disorders as in this case high point on full cast crown can be one of the etiological factor. The same objective we followed for this case and we started with stabilization splint and after 4 weeks we achieved promising result with it for patient. Whenever stabilization splint[7] is given there must not be eccentric interference it can also create adverse effect (Fig.13,14,15,16). Splint fabrication should be done after face bow transfer and on semi adjustable articulator. Along with splint, pharmacological measures for symptomatic relief are also always required. We must not forget about the stress relieving exercise. According to literature YOGA is the treatment which can cure the basic etiology of these TMDS and that's stress only.[11] We also took the 6 months follow up patient was asymptomatic and we came to know by history she was doing yoga exercise as a daily practice.

IV. Conclusion:

For the treatment of TMDS, one should always look for the etiology first. As a part of reversible therapy most of the times splint therapy cure disc displacement with reduction or without reduction. Accurately fabricated interferences free stabilization splint can cure disc displacement without reduction(ADDW0R).

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