

## CONSERVATIVE TREATMENT OF TEMPOROMANDIBULAR JOINT DISORDER: A CASE REPORT

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### ABSTRACT:

**Background:** The stomatognathic system is a functional unit that performs masticatory tasks such as swallowing food, speaking and esthetics. This system consists of three main components i.e. TMJ, masticatory muscles and dentition. The temporomandibular joint (TMJ) is one of the most complex joint in the body which is formed by the mandibular condyle fitting into mandibular fossa of the temporal bone. Use of Occlusal splints is one of the most widely accepted conservative therapy for signs and symptoms of temporomandibular joint disorders. In this article, we discuss a case of temporomandibular joint disorder treated with conservative treatment modality.

**Objectives:** This study was conducted to determine the effectiveness of soft occlusal splints as a conservative treatment modality in temporomandibular joint disorders subjects.

**Material and Method:** it is a series of 5 cases of temporomandibular joint disorder which were diagnosed clinically and radiographically in the Department Of Oral Medicine And Radiology, Teerthanker Mahaveer Dental College and Research Centre, Moradabad, Uttar Pradesh, India. After diagnosing the temporomandibular joint disorder soft splints were delivered to patients and recalled was done every month for 3 months to record the improvement in the status of temporomandibular joint disorder.

**Result:** After using soft occlusal splint for 3 months there is significant increase in interincisal distance, reduction in preauricular tenderness, joint noises and mandibular deviation. Thus, soft occlusal splints can be used effectively as a conservative treatment modality for the treatment temporomandibular joint disorders.

**Key words:** Temporomandibular joint disorders, Soft occlusal splints, Conservative treatment modality.



### INTRODUCTION

The TMJ functions uniquely, in that the condyle both rotates within the fossa and translates anteriorly along the articular eminence. It provides hinging movement in one plane and therefore can be considered as ginglymoid joint. However, at the same time it also provides for gliding movements, which classifies it as arthroidial joint. Thus it has been referred

as “ginglymodiarthroidial joint”, a combination of the terms ginglymoid (rotation) and arthroidial (translation) [1]. Temporomandibular disorders are collective term embracing a number of clinical problems that involves the masticatory muscles and tempromandibular joint. Although previous studies or literature showed that there are many treatment modalities to treat temporomandibular joint disorders

from that can be conservative or surgical. This case report describes a case series (5 patients) of temporomandibular joint disorders with click sound treated with polyvinyl sheets.

### CASE REPORT:

A 21 years old male patient reported to Department of Oral Medicine and Radiology, Teerthanker Mahaveer Dental College and Research Centre, Moradabad, with the chief complaint of pain on the right side of face near the ear since 1 week. Patient also gave history of abnormal sounds on right side in front of ear since 3- 4 days while opening the mouth.

Patient was apparently well 1 week back when he noticed pain right side of temporomandibular joint which is localized, lasts for few minutes, aggravates mainly during chewing or opening the mouth wide and relieves by fermentation with luke warm water. No

relevant dental and medical history was present.

On temporomandibular joint examination, it was found that mouth opening was reduced (pre-operative mouth opening was 18mm) which was measured using manual vernier caliper (Fig No. : 1), mandibular deviation was present, tenderness was present (both opening and closing mouth) and clicking sound was present on palpating the right side of TMJ (temporomandibular joint). Based on the history and clinical examination, temporomandibular joint disorder (anterior disc displacement with reduction) involving right side was given as provisional diagnosis. Patient was advised with orthopantomogram. After getting patient consent and explaining full procedure of splint fabrication an alginate impression was taken, cast was prepared and soft Occlusal splint (Fig No: 3) was fabricated with thermally controlled vacuum molding machine (Fig No: 2).

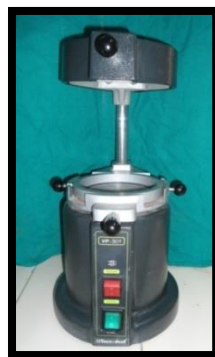


Fig 1: Vernier caliper

Fig 2: Vacuum molding machine

Fig 3: Occlusal splint fabricated on cast

Soft occlusal splint was inserted in the patient's mouth (Fig No.: 3) and recalled after one week and every month for 3 months for the follow up. The subjects

were evaluated for improvement of signs and symptoms i.e. Interincisal distance (post-operative mouth opening was 18mm which was measured using manual

vernier caliper which was , Mandibular deviation, Tenderness, Joint noises during opening or closing.



Fig No.: 3 -Insertion of soft occlusal splint in patient's mouth



Fig no: 2(a )Pre-operative mouth opening & 2(b) Pre-operative mouth opening

## DISCUSSION:

The TMJ syndrome was first described by Dr. James Costen, an otolaryngologist in 1934 <sup>[1,3]</sup> however Scientific investigation of temporomandibular disorders began in the 1950s. TMJ disorders also known as craniomandibular joint dysfunction or temporomandibular joint dysfunction <sup>[2]</sup>. The American Dental Association President's Conference on

Temporomandibular Disorders (ADA, 1983) defined TMD as – a group of orofacial disorders characterized by pain in the pre-auricular area, TMJ, or muscles of mastication, limitations and deviations in mandibular range of motion and TMJ sounds during jaw function. The origin of the TMJ disorder may be extracapsular-involving primarily the muscles of mastication around the TMJ, intracapsular- as a result of abnormalities of the articular surfaces or the mechanical

relationship of the joint and a combination of extra and intra-articular elements [4]. The common signs and symptoms of TMD include pain, joint sounds, limited or asymmetrical jaw movement and spasm of masticatory muscles [5].

It has been observed that TMD is more prevalent between the age of 20 years to 40 years and approximately 33% of population has at least one TMD symptom and 3.6% – 7% of population has TMD with sufficient severity to cause them to seek treatment. The etiology of TMJ disorders remains unclear, but it is likely multifactorial [6].

Temporomandibular joint disorders are not “cured” but are managed instead, treatment of TMJ disorders starts with conservative therapies which are simple and do not invade the tissues of face, jaw and joints. Use of Occlusal splints is one of the most widely accepted conservative therapy for signs and symptoms of temporomandibular joint disorders [7]. An occlusal appliance/ a splint is a removable device, usually made of hard acrylic, that fits over the occlusal and incisal surfaces of teeth in one arch, creating precise occlusal contact with the teeth of opposing arch [8]. Occlusal splint therapy may be defined as “the art and science of establishing neuromuscular harmony in the masticatory system by creating a mechanical disadvantage for parafunctional forces with removable appliances.” [9] According to the glossary of prosthodontics term “occlusal splint is

defined as any removable artificial occlusal surface used for diagnosis or therapy affecting the relationship of the mandible to the maxilla” [10].

Treatment goals are to achieve even and simultaneous contact with the opposing teeth [11]. A study was conducted by Cheena et al in 2014 in which soft occlusal splints were given to 50 patients {28 (56.0%) subjects were males and 22 (44.0%), were females with age ranging from 21-31 years} for about three months and evaluated for temporomandibular joint clicking, reduced mouth opening, mandibular deviation and tenderness of temporomandibular joint after one week of initiation of therapy and every month for three months. It was concluded that there was a significant (88%) increase in mouth opening and decrease in the preauricular tenderness (92%), TMJ noises (84%) and mandibular deviation (88%) in subjects after soft occlusal splint therapy.

## CONCLUSION:

Thus to treat temporomandibular joint disorders it is must to identify the signs and symptoms which is necessary to decide the treatment modality that can be conservative or surgical. Initially the treatment modality should start from conservative treatment modality and then to surgical one which should be last line of treatment. This case series describe a case of temporomandibular joint disorders with click sound treated with polyvinyl sheets.

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