Effectiveness of Occlusal Splints Therapy in the treatment of Disorders in Masticatory System

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Abstract:
Occlusal splint therapy has been used for several years for the diagnosis and handling of numerous disorders of the masticatory system. Numerous designs are designated in both the literature and educational lectures. The tenacity of this article is to explain the reader recognizes of the basic splint designs and recognize which factors are significant, categories of occlusal splints in determining how to use this efficiently in daily practice.

Keywords — Occlusal Splints, Masticatory system, Splint types.

1. INTRODUCTION

Occlusal splint therapy does not include invasive surgery or medication, so it can be a better way to treat occlusal disorders for both patients and dentists. It does, though, need careful analysis of symptoms to confirm the patient receives the right type of splint. Learning a few realities and basic points about occlusal splint therapy can help dentistry students apprehend how to apply it.

Occlusal splint therapy has been shown to be useful for the diagnosis and management of numerous masticatory system disorders. Occlusal splints are often suggested by dentists and other health professionals to treat a range of conditions, comprising of bruxism/parafunctional habits, fatigued masticatory muscles, headaches, sore teeth, worn teeth, malocclusion, and noisy and uncomfortable temporomandibular joints (TMJ).

Occlusal splints have three main purposes in modifying masticatory system dynamics:
1. Alteration of the dental occlusion
2. Reduction of muscle contraction and related forces
3. Repositioning of the TMJ

1.1 DEFINITION OF OCCLUSAL SPLINTS:
Occlusal splints can be well-defined as "rigid or flexible appliances that overlay the occlusal surfaces of the teeth. They are used to treat clenching and bruxism and their sequelae, and to offer temporary relief from muscle or temporomandibular joint pain." An occlusal splint can allow the patient's upper and lower jaw to come together without the upper and lower teeth touching one another. It eases discomfort related with jaw conditions and can help correct jaw misalignment. An occlusal splint commonly has a minimum thickness of 1.5mm on the occlusal surface and often more toward the back of the molars.

2. OCCLUSAL SPLINT FUNCTIONS:
Occlusal splints fall under two groups according to their general function: permissive and directive. The former help patients correctly close their jaw and are more common. The latter prevent discomfort when the jaw comes into a closed position.

2.1 Permissive:
Permissive occlusal splints help patients bring their mandibular condyles into a fully seated joint position by forming smoother occlusal contacts. When the contact surface turn into smooth, the patient's teeth can no longer prevent proper seating of the mandibular condyles. Permissive occlusal splints can also increase masticatory function.

2.2 Directive:
Rather than let the mandible move freely, directive occlusal splints set it into a predetermined position. They are only used when a structural problem in the jaw joints causes uneasiness as the mandibular condyles come into a fully seated joint position. In this case, the occlusal splint monitors the mandible forward to avoid the jaw joints from fully seating.

3. TYPES OF OCCLUSAL SPLINTS
Four categories of occlusal splints are common to dentistry: soft splint, stabilization splint, anterior repositioning splint, and localized occlusal interference.
splint. A fifth splint, the pivot splint, is less communal but can offer therapeutic relief for patients with a degenerative temporomandibular joint. Whether it is breach a habit such as teeth-grinding or correcting a temporomandibular joint problem that causes distress, each occlusal splint functions a precise purpose.

3.1 Soft Splint:
A soft splint is the most generally prescribed sort of occlusal splint. It is can be created quickly and simply and is generally made of a resilient material such as a polyvinyl sheet. The soft splint serves to bring instantaneous relief for patients with an acute temporomandibular disorder. It is usually 2-4mm thick and frequently sits on the maxillary teeth, though it can be fabricated for the mandibular teeth as well. A soft splint typically lasts for 4-6 months before it needs to be changed, and patients usually wear them merely at night.

3.2 Stabilization Splint:
A stabilization splint can dismiss temporomandibular joint arthralgia, masticatory myalgia, and facial arthromyalgia that result from occlusal obstructions or a divergence among centric occlusion and centric relation that cause. The splint itself is made of hard acrylic and shields the complete row of teeth. It can fit to either the maxillary or the mandibular teeth. Patients normally wear a stabilization splint only at night. The lower jaw initiates to shift its position over time as the splint resets its muscle memory. The splint must therefore be adjusted occasionally to accommodate alterations in the jaw's position. Therapy with a stabilization splint usually lasts 2-3 months before patients can begin limiting their use of the device.

3.3 Anterior Repositioning Splint:
Anterior repositioning splints are used to treat clicking sounds from the jaw joint, locking of the jaw, and inflammation subsequent from disc-interference disorders. This full-coverage splint sits on the lower arch and guides the mandible forward and downward into an anterior position to avert the mandibular condyles from fully seating. With the mandible in a therapeutic position, the disc can relocate to eradicate the symptoms interference was previously causing. As the condyle-disc relationship progresses, the patient can decrease the amount of time he or she wears the splint.

3.4 Localized Occlusal Interference Splint:
A localized occlusal interference splint can treat bruxism and clenching in centric occlusion. This kind of occlusal splint features a palatal plate that grips wires each bearing a ball at the end and fitting around the area of the first molar or second premolar. As the molars close against the wires, the other teeth are vetoed from touching one another in centric occlusion. The load upsurges on the four posterior molar teeth, causing uneasiness when the patient efforts to grind or clench their teeth in centric occlusion. Patients wear a localized occlusal interference splint when they most frequently grind and clench their teeth, such as while sleeping or driving.

3.5 Pivot Splint:
A pivot splint is a directive occlusal splint, but it is limited to the utmost possible posterior molar versus fitting over the entire row of teeth like other directive splints do. The hard acrylic implement fits on one arch, creating a single point of contact. It guides the mandibular condyles downward during occlusion, dismissing pressure on the joint and permitting the disc to move into the correct position. Pivot splints are most apt for handling signs of degenerative temporomandibular joint diseases.

4. TREATMENT OF DISORDERS
The most communal uses of occlusal splint therapy are to treat bruxism and temporomandibular joint disorders. The prior is a habit that can lead to additional
complications, and the later represent malfunctioning of the jaw that frequently results in discomfort.

**Bruxism**

Bruxism is the grinding or clenching of teeth outside of mastication of food. It has been assessed that one-third of the world's population is affected by bruxism. The situation has a habit of to be nocturnal, when the patient has no control over jaw movement. The force that bruxing produces could damage the teeth and lead to mandibular discomfort. Occlusal splint therapy dismisses the pressure that bruxism puts on teeth, and can, in the event of a localized occlusal interference splint, discourage patients from bruxing. Patients most generally brux at night and several only wear their occlusal splint during this period. Stress can also bring bruxing, so patients under psychological strain should wear a splint during the day as well.

**Temporomandibular Joint Disorders:**

Temporomandibular joint (TMJ) disorders are the malfunctioning of the joints that connect your mandible to the skull and the chewing muscles. The condyle of the joint does not sit correctly when the mandible is in the closed position, leading to uneasiness for the patient. A range of dissimilar aspects can source TMJ disorders, but there are no conclusive links between certain habits and activities and disorders. For instance, some people who brux also develop TMJ disorders while others do not. A misaligned bite can also lead to TMJ disorders but not essentially. Patients with TMJ disorders regularly suffer from symptoms such as facial pain, jaw pain, ear pain, trouble in chewing, and locking of the jaw. Occlusal splint therapy seeks to dismiss these symptoms by avoiding TMJ condyles from coming into a fully seated position. In the best cases, a misaligned disc comes back into position to allow the condyles to sit at ease once again.

5. **PATIENT USE OF OCCLUSAL SPLINTS**

The location of the occlusal splint and the duration for which it must be worn are two of the main decisions when determining how to continue with therapy.

**Location:**

Occlusal splints can fit on either the maxillary or mandibular teeth. If the patient is missing teeth, the splint should go on whichever row is lost the most teeth for the reason that the splint will create more occlusal points there and therefore have a tougher stabilizing effect. In the case of severe Angle Class II malocclusions, the splint should go on the maxillary teeth for the reason that a mandibular splint will not give the mandible proper guidance. If the patient has a severe Curve of Spee, a mandibular splint will better treat his or her signs.

**Duration:**

Several patients who brux and clench wear their occlusal splint especially at night for the reason that they cannot control their jaw movement while they sleep. Those who involuntarily brux and clench during the day could also wear their splints while they are awake. Patients with TMJ disorders might wear their splint throughout the day if their discomfort is severe sufficient to warrant doing so. The duration of therapy will rest on the type of splint. Localized occlusal interference splints and pivot splints should be worn for 4-6 weeks. Wearing them for longer can permanently change the occlusion. Soft splints can be worn forever, but they need periodic replacement. Patients normally wear a stabilization splint full-time for 2-3 months before weaning off of it.

**CONCLUSION**

Occlusal splint therapy is an operative means of diagnosing and managing precise masticatory system disorders. Occlusal splint therapy can be an operative
means of treating bruxism and temporomandibular joint disorders. When the dentists choose the right type of splint, place it appropriately, and set the correct course for therapy, they can get their patients aid.

REFERENCES

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