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Correcting Oro-Facial Dyskinesia Using The Occlusal Splint Therapy A Case Report

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Abstract:

This case report presents a patient with symptoms similar to Orofacial Dyskinesia and orofacial pain. When evaluated incorrect occlusion and reduced vertical dimensions were at fault. The patient then was treated using the conventional prosthodontic management for Temporomandibular disorder using corrective occlusal splint. The symptoms responded positively to the treatment. The patient though was on a transient treatment with further prognosis to be evaluated in succeeding years.

Key words: *Dyskinesia, Movement disorder, Splint, Temporomandibular disorder*

1.Introduction

The movement disorders which involve the facial, oral and cervical musculature are enormous¹⁻⁴ one of which is Orofacial Dyskinesia (OFD) or Tardive Dyskinesia(TD). It consists of involuntary, repetitive, purposeless movements that vary in location and form.⁵⁻⁶ These movements may go unnoticed or cause social embarrassment, oral traumatic injury, speech difficulty, chewing and eating disorders, inability to wear prosthesis etc.

The most often involved regions of the face are the lower part. Various features shown may be grimacing, tongue protrusion, lip smacking, puckering and pursing of lips, chewing like movements and eye blinking.⁷⁻⁸ It found its origin in 1956, since then it was primarily considered as an involuntary movement disorder of neurologic origin caused by the use of neuroleptic drugs known as dopamine receptor antagonist or DRAs.⁹⁻¹¹

Any case of OFD should be initially considered drug induced until proved otherwise, this allows a proper diagnosis and medical history. Though neuroleptics remain the prime cause, there are other causes or factors as well like Subcortical infarcts, Schizophrenia, Autism, Rett Syndrome, Dementia, Mental retardation, and also ill fitting denture related Dyskinesias are observed⁵. It also has been reported that dyskinetic movements can occur in patients who were never medicated with neuroleptics.¹²

Orofacial Dyskinesia is usually free of pain, but sometimes the movements can be so intense and long-lasting that may cause Cranio-mandibular problems¹³ and pain¹⁴. The relentless clenching and bruxing movements cause secondary orofacial pain due to overloading the TMJ and masticatory muscles.¹³ There exists a brief literature on patients showing uncoordinated, involuntary movements of the face, mandibular and oral structures. These patients were completely edentulous and partially edentulous. But all of them had a common finding of enlarged and uncoordinated tongue. The other thing noticed which existed in these patients was that the dentures which the patient worn had incorrect occlusion and reduced vertical dimensions. When this incorrect occlusion was corrected the dysfunctional symptoms usually diminished or completely disappeared.¹⁵

This case report is detailed similar prosthetic management of a patient reported to Department of prosthodontics, S.M.B.T. Dental college and hospital, Sangamner, Maharashtra, India having Orofacial Dyskinesia due to incorrect occlusion.

2. Case Report

A seventy year old male patient reported to the department of Prosthodontics, S.M.B.T. Dental College with a chief complaint of pain and uncontrolled mandibular movements since six to eight months. The patient was unable to associate any particular event relating to the onset of the symptoms. A detailed history of the patient was recorded with no history of any causative medicaments. The patient was radiographically evaluated for any Temporomandibular disorder. The clinical features were also evaluated.

On Examination the patient had partially edentulous maxillary arch and completely edentulous mandibular arch. The maxillary arch was restored with a metal ceramic fixed restoration, while there was a single complete denture in the mandibular arch. The tongue of the patient was abnormally large. The patient showed involuntary, uncontrolled mandibular movements which simulated chewing strokes. When the patient's occlusion was evaluated it was incorrect and hampered. The occlusal wear observed resulted in loss of vertical dimensions. This was confirmed observing the facial features. Also in the entire occlusion there were no static centric stop and mandible was in complete freedom.

Depending on the history, radiographic interpretation and clinical observation the provisional diagnosis was made of Orofacial Dyskinesia due to ill fitting Prosthesis. Considering positive clinical results with dental prosthetic therapy in the treatment of a variety of severe movement disorder involving face, mouth and neck suggested that occlusal splint therapy might be effective in the treatment of other movement disorders which involve these structures¹⁵. Hence the occlusal splint therapy was initiated.

3. Procedure

Maxillary and mandibular impressions were made using the irreversible hydrocolloid impression material. The cast was then poured using the Type III dental stone. Using wax the interocclusal records were made in centric relation. A double thickness wax was used so that the relation would be recorded at raising vertical dimension. The cast was then mounted on an articulator using the interocclusal boot record. When the interocclusal record was removed the two casts were in relation to each other with increased vertical dimension. A corrective maxillary occlusal splint was then fabricated using the conventional procedures, using autopolymerizing clear acrylic resin. This splint had a correct centric stop with guiding extensions on the lingual aspect of the facial side. The fabricated splint was then finished and polished. Minor occlusal corrections were then done intraorally. The patient then was instructed to wear the splint and was recalled every week for check up. After three weeks the patient had no pain and the uncontrolled movements of the mandible were reduced as well.

The patient was instructed to continue using the occlusal splint till a more definite treatment is planned and executed to correct the occlusal disharmony.

4. Discussion

Various movement disorders mainly have their origin with the diseases of the CNS, Orofacial Dyskinesia is one of them. However, in this report the patient was treated only with peripheral treatment. The patient had gross occlusal inadequacies. Dramatic relief was seen in the patient merely by giving him a more correct and static occlusion. This newly provided static occlusal relationship provided a more balance between neuromusculature and related anatomy.

There was a disruption in sensation mainly proprioception which may play a vital role in the etiology of Orofacial Dyskinesia.¹⁵ The movements of the orofacial Dyskinesia patient may be a searching movement attempted for finding clues to orient the mandible in space.

When a patient loses his teeth along is lost all the periodontal support and vital nerve supply. Sicher¹⁶ has clearly noted that this loss can cause dysfunction. Thus the conclusion can be drawn that individuals who have lost vital guiding signals, due to loss of periodontia result in wavering uncertain pattern of the bite. This lost guidance when was delivered to the patient in the form of corrective bite splint with static contact the normalcy of closure pattern was re-achieved by the patient.

In the patient due to uncontrolled bruxing and clenching the vertical dimension had reduced which later was increased in the occlusal splint. This excessive Vertical dimension might have improved both conscious and unconscious proprioception by stretching muscle spindles, increasing tension on the tendon organs and altering the angle of TMJ when prosthesis occluded.

The treatment delivered to the patient however is in the transient phase and more observations can be drawn in succeeding years with a definitive therapy.

5. Conclusion

There exists certain edentulous patient showing involuntary dystonic movement, representing Orofacial Dyskinesia. The symptoms of this responded positively when a correct prosthetic dental therapy was introduced. The patient had incorrect occlusal relationship which when corrected gave the patient much needed relief. Thus its again conformed that disruption of dental proprioception can cause Orofacial Dyskinesia. Hence a proper diagnosis and palliative prosthodontic management may help such a patient.



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