Prosthetic Management of Complete Edentulous Patient with Oromandibular Dyskinesia: A Case Report

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Abstract: This case report presented a 65-year-old complete edentulous female with oromandibular dyskinesia who was rehabilitated with implants retained mandibular denture and conventional maxillary denture. In addition, a soft splint was given to the patient to prevent the wear of acrylic teeth, to distribute the force and to prevent trauma to the tissues. The prosthetic rehabilitation helped in improving the dyskinetic symptoms with better function and the quality of life.

Key words: Oromandibular Dyskinesia Edentulous Mandible Conventional Maxilla Denture Implant Retained Mandibular

INTRODUCTION

Oromandibular Dyskinesia (OMD) or tardive dyskinesia has been described by various authors as an involuntary movement disorder of neurologic origin. OMD is a disorder that involves involuntary movements especially of the lower face and iscaused by the use of neuroleptic drugs known as dopamine receptor antagonists (DRAs) [1, 2]. OMD is usually results as a late side effect of atypical antipsychotics (neuroleptics). Such common drugs include Chlorpromazine, Fluphenazine, Haloperidol, Trifluoperazine [2-4].

Studies have shown that atypical antipsychotics provide improved treatment for schizophrenia compared with the typical or first-generation antipsychotics and they have a relatively higher serotonin-to-dopamine receptor antagonism [4, 6, 7]. Atypical antipsychotics have less affinity for Dopamine-2 (D2) receptors and more of an affinity for Dopamine-4 (D4) receptors [5]. There is a wide variation in reported prevalence, which can vary from 1 to 54% of those taking antipsychotics [2, 6].

The signs and symptoms of OMD include facial grimacing, finger movements, jaw swinging, repetitive chewing, clinching, licking and tongue thrusting varying from mild to severe. Some patients will also develop choreiform (Involuntary jerky displacements of short duration) of the hands and arms. They resemble purposeful incomplete actions with varying severity [4, 7, 8]. The repetitive movement of the jaw may cause fracture of the teeth. In denture patients, may cause loosening of the dentures, trauma to the tissues underneath the denture and temporomandibular pain. The prognosis of OMD may vary from one patient to another. In some patients, the condition may be reversed by stopping the drug that caused the symptoms, but in some it may become permanent or may become significantly worse [3, 4].

The present article presented a case of OMD who was rehabilitated with implants retained mandibular denture and conventional maxillary complete denture and uneventful follow-up for one year with improving the dyskinetic symptoms.

Case Report: A 65-year-old female was referred to formissing teeth with difficulty of wearing dentures. She had been edentulous for 6 months. Her medical history revealed that she had depression and was under medication of Phenothiazine Dopamine-2(D2) receptor antagonists since 5-6 years. She showed involuntary, uncontrolled continuous mandibular movements which simulated chewing strokes (Fig. 1).
On intraoral examination, maxillary and mandibular arch were edentulous (Fig. 2-3). Mild ulcerations were seen in the anterior region of maxillary and mandibular arch. Mild bone resorption was seen in maxillary arch. Tori were present bilaterally in the premolar region in mandibular arch. After the discussion with the patient regarding the treatment options and costs, she chose conventional maxillary complete denture and implants retained mandibular complete denture this precluded the torectomy. From her past medical history, examination and clinical findings, she was diagnosed with oromandibular dyskinesia.

Then, 4 one-piece implants of 3 x 10 mm (MS Implant System, Osstem, Seoul, South Korea) were placed in the mandibular arch; in canine and first molar region (Fig. 4). After the implant placement surgery, implants retained mandibular complete denture and conventional maxillary complete denture were fabricated with immediate loading protocol (Fig. 5). One-piece implants were chosen because they would cost lower price and ease in placement compared to conventional implants. The occlusion scheme selected was bilateral balanced and semi-anatomic. Ball attachment was used for the retention in mandibular denture. At night, the patient was still clenching. If the patient doesn’t wear denture during sleep, there might be traumatized at the alveolar mucosa in the maxillary arch. So to prevent this, the patients was suggested to wear the dentures during the night also. A soft occlusalsplint (Comfort H/S TM Soft Bite Splint; Erkodent, Michigan, USA) was fabricated over the maxillary denture (Fig. 7-8). The patient was instructed to wear it over the maxillary denture during the night. The dentures were delivered to the patient and hygiene instructions were given. 0.5% Sodium hypochlorite denture cleaning agent was recommended daily.
Fig. 6: Frontal view of the patient with conventional maxillary complete denture and implants retained mandibular complete denture.

Fig. 7: Splint fabricated over the maxillary complete denture to prevent wear of the denture acrylic teeth, to distribute the force and to prevent trauma to the tissues.

Fig. 8: Splint over maxillary complete denture in patient's mouth.

Recheck was done one week after the insertion with minor adjustments. At follow up of one year, there was no complain and the patient reported that the prosthetic rehabilitation improved the mastication and speech, with improvement in the dyskinetic movements. The denture was stable with jaw support at centric occlusion. The patient was satisfied with the aesthetic and functional outcome.

DISCUSSION

Oromandibular dyskinesia or tardive dyskinesia manifests with a wide variety of involuntary, repetitive, persistent and stereotypic movements of the mandible, consisting of vertical and horizontal components forming an elliptical movement pattern [9]. The differential diagnoses of OMD include Parkinson disease, Huntington disease, Spontaneous orofacial dyskinesias, Stroke-induced chorea, Lithium toxicity, and Dilantin toxicity [4]. TD differs from Parkinson disease in that tremors appear to be absent and is usually a late side effect of antipsychotic drugs [2, 4].

Prosthetic rehabilitation helps in maintaining the normal occlusion which is capable of securing a stable mandibular position and adequate muscle rest without worsening the dyssynaptic movements. Fabrication of conventional complete denture in edentulous patients with OMD poses serious difficulties because of the marked instability involved especially in mandibular arch. The situation is worse in the resorbed mandible. This problem can be resolved by placing implants in mandibular arch that facilitate adequate prosthetic stability and retention with restoring the occlusion [10-12]. OMD, which might be exacerbated by edentulism and occlusal rehabilitation, thus affords improvement of anomalous movements in these patients [10, 13]. In a case of OMD reported by Kelleher et al. [14] partial tooth loss stabilized her oromandibular dystonic movements, with improved function and esthetic results [15]. In our patient, implants retained mandibular denture was selected. In addition, the immediate loading protocol was selected using one-piece implants. One-piece implants are small and are designed for narrow ridge. The implants can be placed minimally invasive into the bone and can be loaded immediately after placement in the lower jaw and the patients can function soon after the implant surgery [14]. Regarding occlusion, bilateral balanced and semi-anatomic occlusion was selected as it is preferred in compromised and elderly patients. A soft occlusal splint was given to this patient. It stabilizes an unstable occlusion, eliminates the effect of occlusal interferences, promotes jaw muscle relaxation [16-19]. It was given in our patient to prevent the wear of acrylic teeth, to distribute the force and to prevent trauma to the tissues.
Oral hygiene in elderly with denture is difficult and it can result in poor oral hygiene results in accumulation of dental plaque and dental biofilms. In addition, out patient wears dentures during night also. The denture cleaning agent recommended was 0.5% Sodium hypochlorite denture cleaning agent as it significantly reduces the dentures microorganisms in denture users with improved their oral health care [20].

Oromandibular dyskinesia may be a late side effect of antipsychotic drugs. Although it cannot be permanently cured, with appropriate prosthodontics rehabilitation, the dyskinetic symptoms may be reduced improving the function and the quality of life.

REFERENCES


