Academic Journal of Oral and Dental Medicine 1 (1): 01-04, 2014
ISSN 2222-128X

DOI: 10.5829/idosi.ajodm.2014.1.1.82208

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

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Abstract: This case report presenteda 65-year-old complete edentulous female with oromandibulardyskinesiawho 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 thedyskineticsymptoms with better function and the quality of life.

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

INTRODUCTION

Oromandibular Dyskinesia (OMD) or tardive dyskinesiahashas 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 antipsychoticsprovide improved treatment for schizophrenia compared with the typical or first-generation antipsychotics and they have a relatively higher serotonin-to-dopamine receptor blAugust 3, 2014 ocking ratio [4, 6, 7]. Atypicalantipsychotics have less affinity for Dopamine-2 (D2) receptorsand more of an affinity for Dopamine-4 (D4) receptors [5]. There is a wide variation in reported prevalence, whichcan vary from 1 to 54% of those taking antipsychotics [2, 6].

The signs and symptoms of OMD include facial grimacing, finger movements, jaw swinging, pepetative chewing, clinching, licking andtongue 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 varyingseverity [4, 7, 8]. The repetitive movement of the jaw may cause fracture of the teeth. In denture patients, may cause looseining of the dentures, trauma to the tissuesunderneath the denture and temporomandibularpain. 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 presenteda 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 withdifficulty of wearing dentures. She had been edentulous for 6 months. Hermedical history revealed that she had depression and was under medication of Phenothiazine Dopamine-2(D2) receptor antagonistdrugs since 5-6 years. She showed involuntary, uncontrolled continuous mandibular movements which simulated chewing strokes (Fig. 1).

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Fig. 1: Frontal view of the patient showing with oromandibular dyskinesia.

Fig. 2: Edentulous maxillary arch of the patient.

Fig. 3: Edentulous mandibular arch of the patient.

On intraoral examination, maxillary and mandibular arch were edentulous (Fig. 2-3). Mild ulcerations were seen inthe anterior region of maxillary and mandibular arch. Mild bone resorption was seen in maxillaryarch. Tori were present bilaterally in the premolar regionin mandibular arch.Afterthe discussion with the patient regarding the treatment options and costs, she chosedconventional 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.

Fig. 4: Four one-piece mplants placed in mandibular arch for the support and retention of the denture.

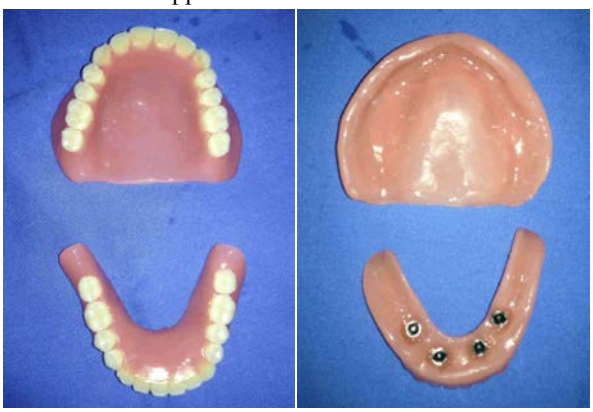

Fig. 5: Conventional maxillary complete denture and implants retained mandibular complete denture.

Then, 4 one-piece implantsof 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.Asoft 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 orofacialdyskinesias, 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 maintainingthe normal occlusion which is capable of securing a stable mandibular position and adequate muscle rest without worsening the dyskinetic movements. Fabrication of conventional complete denture in edentulous patientswith OMDposes serious difficultiesbecause 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 andocclusal rehabilitation, thus affordsimprovement of anomalous movements in thesepatients [10, 13]. In a case of OMD reported by Kelleher *et al*. [14] partial tooth loss and occlusal alterations preceded the appearance of involuntary movements and therefore it was decided to utilize a mandibular overdenture supported by endosteal implants. In 5 years of follow-up, the patient slowly 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 protocolwas 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 andthe 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 elderlywith 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 agentas it significantly reduces the dentures microorganisms in denture userswith improved their oralhealth care [20].

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

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