

Oral rehabilitation of a Parkinson's patient: A case report

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Abstract

Parkinson's disease is an idiopathic disorder of the central nervous system, characterized by resting tremors, muscular rigidity, slow and decreased movements. Oral rehabilitation of these patients requires special care, especially in those cases where the patient's socioeconomic status is not good and patient cannot come several times for fabrication of a complete denture. This clinical report presents a case of a Parkinson's patient who was completely rehabilitated in 3 appointments using special techniques. Border molding, final impression and jaw relation procedures were done in one appointment by using a custom tray with detachable handles and occlusal rims.

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Key words: Parkinson's disease; Tich buttons; Detachable handles and occlusal rims; Monoplane teeth

Core tip: Parkinson's disease is a debilitating disease. Patients cannot visit the dentist frequently for procedures like complete denture, especially when the disease is at an advanced stage. The matter becomes worse when the patient is poor and unable to bear the

cost. This case report presents a solution to above mentioned problem in a simple and lucid manner, where patient has to visit the dentist only thrice, at no extra cost.

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INTRODUCTION

Parkinson's disease is a chronic, progressive, neurodegenerative disorder, characterized by resting tremor (in hands, arms, legs, jaw and face), rigidity and stiffness (limbs and trunk), and postural instability or impaired balance and coordination^[1-3].

It is the fourth most common neurodegenerative disorder^[2]. It is characterized by resting tremors, muscular rigidity, slow and decreased movement and postural instability. It is a major cause of disability, social isolation, loss of self esteem and depression. Oral rehabilitation of these patients requires a multidisciplinary approach^[3] and special care because, due to increased tremors, increased saliva, diminished adaptive skills and poor muscle control by the patient, prosthodontic procedures become difficult to perform and retention of dentures is compromised^[4]. Also, the patient finds it difficult to care for and maintain the denture. Therefore, prosthodontic procedures become difficult to perform and require special care and attention. Moreover, the patient cannot visit the dentist several times due to his medical condition^[5].

Previous studies^[6-10] have been done on the fabrication of complete denture for patients suffering from Parkinson's disease. The main drawback was its cost. The Parkinson's patient who belongs to a poor socio-economic status cannot afford such therapy. Here, tich buttons were used instead of metal styli to solve this problem. Tich buttons are cheap and more easily available than metal styli.

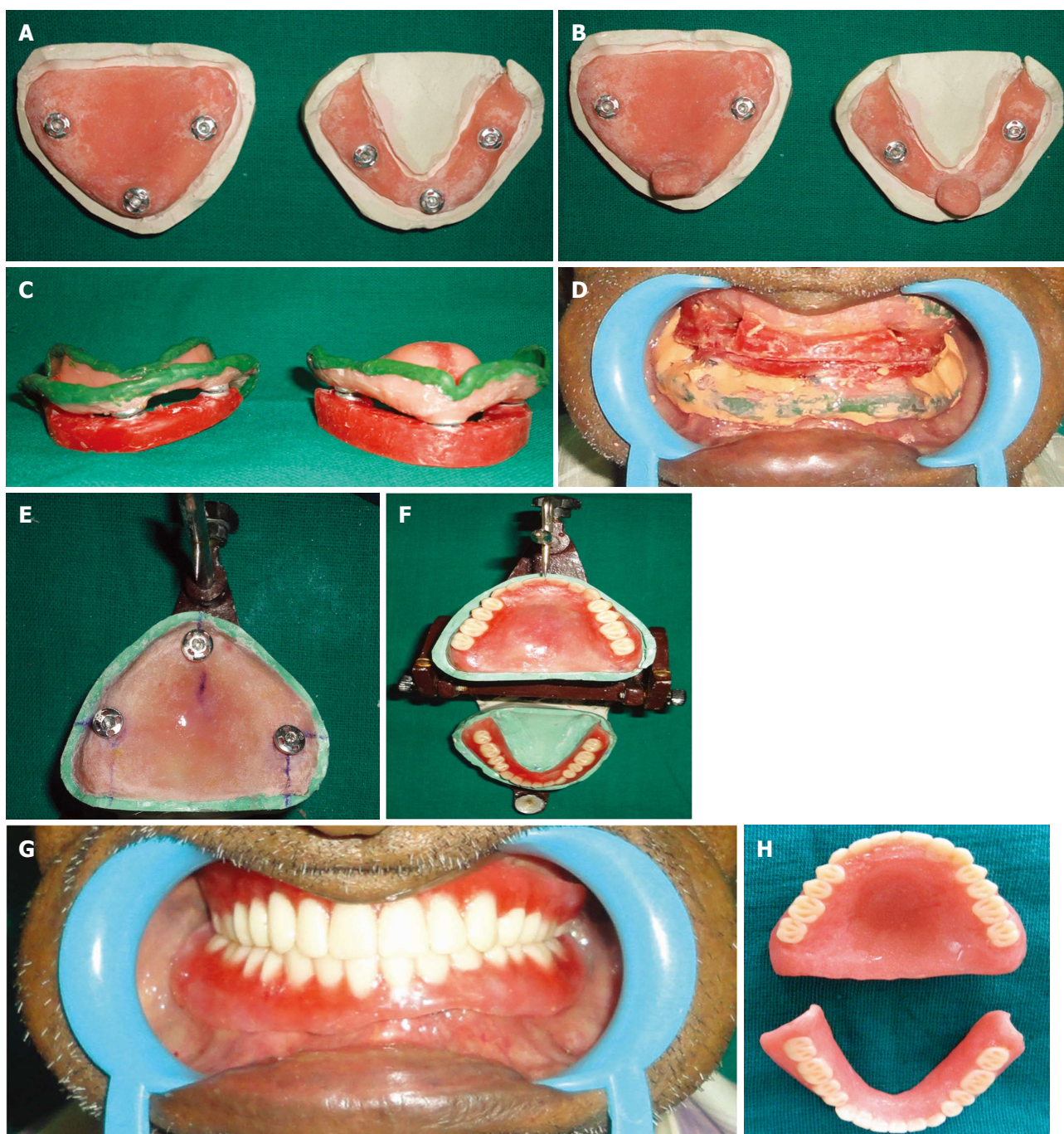


Figure 1 Denture procedure. A-C: Maxillary and mandibular special trays. A: Before the acrylic resin set, sleeve of one tich button was inserted in the anterior region and two in the posterior region; B: After setting, handles were separated from the tray and all tich buttons locked with its other part and occlusal rims were fabricated on it; C: Now the handles were removed and occlusal rims were attached, ready to record vertical and centric jaw relation in a conventional manner; D: Recording of jaw relation. Final impression was made with zinc oxide eugenol with handles reattached. After final impression, both occlusal rims were reattached and sealed at established vertical and centric relation; E: Articulation and mounting of casts on mean value articulator. Articulation and mounting of casts on mean value articulator; F: The rims reattached on the new sleeves and teeth arrangement was done using monoplane teeth; G: Trial dentures were checked in the patient's mouth for esthetics, phonetics, border extensions, midline and vertical dimension; H: Dentures cured and polished and delivered to the patient.

This clinical report describes the fabrication of complete denture for a patient suffering from Parkinson's disease by using certain modifications, like combining border molding, final impression and jaw relation procedures in one appointment^[1] by using a custom tray with detachable handles and occlusal rims with the help of tich buttons and use of non-anatomic or monoplane

teeth that helped in delivery of the denture in three appointments.

CASE REPORT

A 55-year-old male patient reported to the dental OPD, Subharti Dental College, Meerut for the fabrication of

complete denture. The patient had a 5-year medical history of Parkinson's disease and was on drug therapy. His physical and financial condition led to planning a denture with certain modifications.

Procedure

On the first day, primary impressions were made with an impression compound in the conventional manner and the primary cast was obtained and the acrylic resin was mixed and adapted on the primary cast to make a custom tray in the conventional manner. Before the acrylic resin set, the sleeve of one tich button was inserted in the anterior region and two in the posterior region (Figure 1A). Surveyor was used for this so as to make the long axis of all vertical and parallel to each other. Now the other part of the tich button was placed on the anterior and handles were made (Figure 1B). After setting, the handles were separated from the tray and all tich buttons locked with its other part and occlusal rims were fabricated on it. Now the maxillary and mandibular custom trays were ready for making impressions with the detachable handles and occlusal rims, depending on the procedure. On the second appointment, with the handles attached, border molding was completed. Now the handles were removed and occlusal rims were attached and vertical and centric jaw relation records were established in a conventional manner (Figure 1C). The final impression was made with zinc oxide eugenol with handles reattached. After the final impression, both occlusal rims were reattached and sealed at the established vertical and centric relation (Figure 1D). Custom tray and final impressions from occlusal rims were separated and handles reattached and impressions were poured after beading and boxing. Occlusal rims were reattached and measurements of the proper position of buttons and height of the rims noted to avoid any error in placing buttons on denture bases. Finally, mounting was done. Denture bases were fabricated in the conventional manner but at the same time placing sleeves of buttons on it before setting (Figure 1E). Position of the buttons can be verified by rims as well as measurements taken before. Now the rims reattached on the new sleeves and teeth arrangement was done using monoplane teeth (Figure 1F). On the third appointment, trial dentures were checked in the patient's mouth for esthetics, phonetics, border extensions, midline and vertical dimension (Figure 1G). To avoid a fourth visit, wax up and carving were done at the time of teeth arrangement. Dentures were cured and polished and delivered to the patient (Figure 1H).

DISCUSSION

Parkinson's disease is a chronic, progressive, neurodegenerative disorder, characterized by resting tremor (in hands, arms, legs, jaw and face), rigidity and stiffness (limbs and trunk), and postural instability or impaired balance and coordination. There are peculiar clinical fea-

tures of this disease, like resting tremors, muscular rigidity and hypokinesia, facial impassiveness and cogwheel type of rigidity^[12].

Dentists face many problems^[13,14] in fabrication of complete denture in such patients because increased tremors, increased saliva, diminished adaptive skills and poor muscle control make impression making and jaw relation recording difficult, causing compromised retention. When the center of gravity is displaced, there may be tendency to fall forward/backward. The tongue may dislodge the mandibular denture and facial muscles that are rigid or uncontrollable may prevent a maxillary denture from maintaining a retentive seal. Also, the patient finds it difficult to care for and maintain the denture.

The patient was not able to visit several times for the procedure. Therefore, border molding, final impression and jaw relation procedures were combined in one appointment by using a custom tray with detachable handles and occlusal rims with the help of tich buttons. In such cases, facebow transfer and Gothic arch tracings cannot be recorded due to the medical condition of the patient. This eliminated the use of a semi or fully adjustable articulator. Monoplane teeth were used to compensate for the variable centric relation.

The technique described here is relatively simple and a drastic departure from the conventional procedure. With this technique, complete denture was delivered in three visits and was also very economical for the patient. Although this technique increases laboratory time, it reduces the clinical visits to a greater extent without compromising the basic principles of complete denture fabrication.

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