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Case Report

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RE-HABILITATION OF A PARTIALLY EDENTULOUS CASE WITH TELESCOPIC OVER DENTURES – A CASE REPORT

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ABSTRACT

Partial edentulousness with reduced number of abutments is a challenging condition and over denture treatment with telescopic copings on retained teeth is a viable treatment option for such cases. This clinical report aims at rehabilitating a partially edentulous patient with telescopic over–denture prosthesis. The goal of the treatment was to maintain the roots to prevent alveolar bone resorption and provide better stability of the denture with emphasis on psychological aspect of not being completely edentulous.

KEYWORDS: Reduced dentition; telescopic dentures; proprioception; over dentures

INTRODUCTION

Rehabilitation of a partially edentulous patient can be established using a wide range of prosthetic treatment options. Depending upon the clinical need and demand, restoration of the lost structure can be achieved by using simple conventional removable partial denture, over denture, fixed partial denture or dental implants. Telescopic coping had resemblance to an optical telescope so was called double crown & later came to be known as telescopic denture.[1] Telescoping means use of primary full coverage crowns which are luted on prepared tooth. A secondary superstructure casting is then fabricated on this & interconnected by friction due to interfacial surface tension.[2,3] These telescopic copings help to transfer forces along the direction of long axis of abutment teeth & provide guidance, support & protection from movement that might dislodge the RPDS.[4] Telescopic copings are very beneficial in patients with periodontal disease as they provide excellent support & splinting for periodonttally weakened teeth.[2,5] Fixed dentures fabrication was difficult considering highly reduced dentition with regards to number of teeth lost due to periodontal disease. Patient did not want total extraction and conventional complete dentures. Economic factor eliminated the treatment by dental implants.

CASE REPORT

A 45 years old female patient reported to Prosthodontics Department, MGV Dental college, Nashik with the chief complaint of inability to masticate food and difficulty in speech due to lost teeth. Preliminary examination revealed that patient had missing 17, 16, 15, 13, 12, 11, 21, 22, 24, 26, 37, 36, 34, 32, 31, 41, 42, 45, 47 oral hygienic status was fair and calculus was prsent. Diagnostic impression were made using irreversible hydrocolloid impression material and inter-occlusal bite registration was taken. The impressions were poured and diagnostic models were mounted on a semi-adjustable articulator. A diagnostic surveying of the models was done. A complete radiographic survey was done to correlate with clinical findings. Scaling polishing was done and patient's periodontal status reviewed after 6 weeks. During definitive intra-oral examination the potential abutments were evaluated to determine their periodontal condition, pockets, mobility, caries, old restorations, vitality, abrasions & supra-eruption.

The diagnostic findings :

1. Interarch distance – 24 mm.
2. High well round ridges. [Maxillary & Mandibular]
3. Partially edentulous maxillary & mandibular arches (Kennedy class 1 & 2).
4. Abutments had satisfactory crown root ratio.

TREATMENT PLAN

It was decided prosthetically to rehabilitate the patient with a telescopic prosthesis for both arches. Intentional RCTs were performed on 14,

Fig. 1: Intraoral view

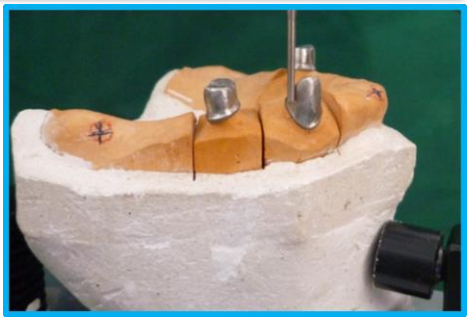

Fig. 2: Primary copings (Maxillary cast)

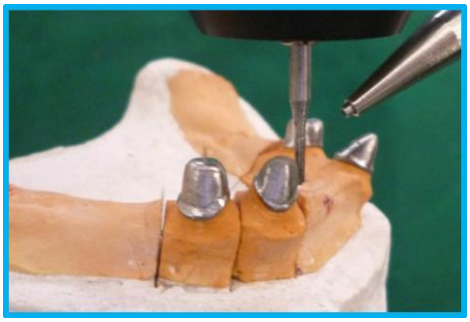

Fig. 3: Primary copings (mandibular cast)

Fig. 4: Metal frame work with Secondary coping maxillary arch

Fig. 5: Metal frame work with Secondary coping Mandibular arch

Fig. 6: Final Prosthesis

23, 25, 33, 35, 43, 44. Tooth preparation done, preparing a chamfer finish line of 0.7mm, axial wall height of 4mm and taper of approximately 8-10^0. Impressions were made for final cast using medium body single step technique in custom trays. The first master model was prepared from this impression for fabrication of the primary coping. This was followed by interocclusal record & face bow transfer in the laboratory, the wax patterns were prepared for primary copings and milled to achieve parallelism. Primary coping were fabricated and tried for fit. They were luted with temporary cement (ZnOE) and an over impression made with medium body addition silicone material. The second master model was made for fabrication of cast partial superstructure. Jaw relation was recorded and models with coping were mounted on a semi-adjustable articulator using the same face-bow transfer record. In the lab, copings on the second master model were milled with a parallelometer to obtain a milled surface of minimum 4mm. for friction. The second master model together with the primary copings was duplicated & the refractory model prepared. The cast partial framework was waxed up & cast using base metal alloy (cobalt-chrome) with the secondary coping overlay of the primary copings. The fit of the framework was tried inpatients mouth and used as a carrier to cement the primary copings in place. Primary copings were luted with (Type 1; GC Fuji). A wax rim was prepared on this frame work and acrylic teeth set. Denture trial was done & patients approval was taken after verifying for aesthetics, function, phonetic & then maxillary and mandibular dentures were processed. The

complete prosthesis was evaluated for esthetic function& phonetics.

DISCUSSION

Telescopic denture prosthesis was selected for this patient taking into consideration its good retentive and stabilizing properties, rigid splinting action and better distribution of stresses. Other options included total extraction and conventional complete dentures, were not selected because extractions would decrease available bone support and proprioception. Implant prosthesis was not opted as patient was not keen on any surgical procedures & also due to its cost. Telescopic crowns have proven to be an effective means of retaining over dentures. The abutments were selected to achieve a quadrilateral configuration.[6] The advantages of opting this treatment plan was to distribute the load on remaining teeth thus improving the prognosis and achieving a retentive prostheses. Alloys for fabrication of copings were base metal alloys (Cr-Co) considering their low thermal conductivity so avoiding unpleasant thermal sensation cost by excessive tooth preparation and easy to fabricate and economical.[7]

Few Advantages of telescopic over dentures:-

1. Creation of a common path of insertion.
2. Easy to perform routine oral hygiene.
3. Rigid splinting.
4. Easy removal & insertion for the patient.
5. Accommodates future changes for treatment plan.
6. Psychologically well tolerated by patients.

DISADVANTAGES

1. Increased cost over conventional complete dentures.
2. Complex Lab procedures.
3. Increased dental appointments.

CONCLUSION

Although fixed restoration provides favorable conditions for preservation of oral function, telescopic over denture may be considered an alternate option combining good retentive & stabilizing properties maintenance. Regular recall visits were advised for the patient.

CONFLICT OF INTEREST & SOURCE OF FUNDING

The author declares that there is no source of funding and there is no conflict of interest among all authors.

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