



RESEARCH ARTICLE

OVERDENTURE MADE EASY AND SIMPLE-A CASE REPORT

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ABSTRACT

Masticatory function, aesthetics is affected due to tooth loss. Loss of dentition leads to constant remodelling and bone loss is inevitable. The main aim of tooth supported overdenture is to preserve the alveolar bone and maintenance of proprioception. Improved retention, stability, decrease in alveolar bone resorption can be achieved by tooth supported overdenture.

Key words:

Overdenture, Stud attachment,
Essential dental systems.

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INTRODUCTION

An overdenture can be described as any removable dental prosthesis that can rest on one or more remaining natural teeth, the roots of natural teeth or dental implants. By preserving roots it provides psychological benefit to the patient, improving retention, stability and preservation of residual ridge. Renner at all showed that a 50% of roots used as an overdenture abutment remained immobile and became less mobile that was initially mobile (Renner *et al.*, 1984; Kenney and Richards, 1998; Guttal *et al.*, 2011). The mobility of abutment teeth can be decreased after reduction in crown root ratio because of decrease in the length of lever arm delivering the torque to mobile teeth. The important goals of overdenture are to maintain teeth as a part of residual ridge preserve the alveolar bone and increases the patient manipulative skills in handling the denture.

Advantages

- Preservation of alveolar bone
- Preservation of proprioceptive response
- Support
- Retention
- Periodontal maintenance
- Patient acceptance
- Convertibility

- Cost
- Harmony of arch form.

Disadvantages

- Caries susceptibility
- Bony undercuts
- Over contour
- Under contour
- Encroachment of interocclusal distance and aesthetics.

Stud attachments

Attachments are divided into 2 groups

Extra radicular: male element projects from root surface of the preparation or implant; Intraradicular: In which male elements form part of the denture base and engages a specially produced depression within root contour. The various types of stud attachments are dallabona, gerber, ceka, rotherman, Introfix and microfix. Stud devices are simplest of all attachments.it provides additional retention, stability and support. Considerable retention and stability is provided by prefabricated attachments which are versatile.

A CASE REPORT

A 60 year female patient reported to the department with the chief complains of loosening of teeth and difficulty in chewing. On Clinical examination revealed partial edentulous condition of maxillary and mandibular arches. As remaining

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teeth were periodontally compromised, RPD would not restore function and aesthetics (Figure-1).

The different treatment options available to the patient were

- Extraction of remaining teeth followed by conventional complete denture
- Extraction followed by implant supported denture.
- Tooth supported overdenture

The treatment planned for this patient was extraction of teeth with unfavorable prognosis retaining canine and premolar in maxilla and canine in mandible (Figure-2) followed by construction of overdenture as the patient was interested to retain the firm tooth present. After the endodontic treatment the abutment teeth were reduced up to few millimeters above the gingival level and the preparation was rounded to dome shaped contours. The post system is ball and socket attachment. The post space preparation was done using access post kit of Essential dental systems (Figure-3). It consists of primary reamer, counter sinkdrill (Figure-4), access post and nylon cap. The post space was determined using periapical radiograph. 3-5mm gutta-percha was retained. The post space was prepared using primary reamer for maxillary canine and premolar. Secondary tier preparation and flange was created using countersink drill (Figure-5). The fit was determined by trial insertion of access post. Cementation was done after the fit and length of the post was verified (Figure-7). The mandibular canine coping was made after tooth preparation (Figure-6& 8). Primary impression was made and custom tray was fabricated (Figure-9).



Figure 3 & 4. Essential dental systems-access post kit



Figure 5. Tooth preparation and post space preparation done



Figure 1. OPG



Figure 6. Tooth preparation done



Figure 2. Partial edentulous condition



Figure 7. Cementation of stud attachment



Figure 8. Cementation of coping



Figure 12. Try -in



Figure 9. Primary impression



Figure 13. Insertion of prosthesis



Figure 10. Secondary impression



Figure 14. Nylon cap in position



Figure 11. Jaw relation



Figure 15. Final prosthesis

Border moulding was done and secondary impression was made using zinc oxide eugenol (Figure-10). Jaw relation was recorded followed by teeth arrangement (Figure-11). Try-in

was done and the prosthesis was processed (Figure-12&13). Rubber band was placed over the contour of ball post and female caps placed in position (Figure-14). The nylon caps were transferred to the tissue side of the maxillary denture by using auto polymerizing resin (Figure-15). The rubber band was removed and excess flash was trimmed.

DISCUSSION

The quality of life of the complete edentulous patient is affected because of the disturbances in the integrity of the masticatory system with adverse functional, esthetics and psychological sequelae. Support, bone preservation and occlusal vertical dimension can be maintained by the preservation of teeth in both arches of overdenture. The loss of all natural teeth can cause psychological scarring to few patients. So, by retaining at least the root structure and coronal portion of the natural teeth in such patients causes emotional upliftment. 1:2 crown/root ratio and at least 5mm of bone is essential for ball attachment. The occlusal forces are transmitted as tensile load to the underlying bone by periodontal fibers when the teeth are devitalized and used as secondary abutments (Rahn *et al.*, 2015). The teeth does not require parallelism when stud attachment is placed in different roots and allow for the rotation of denture. This type of attachment occupies a small vertical space. The access post kit consists of primary reamer, countersink drill, access post and nylon cap (Sunil and Neha, 2011; Cohen *et al.*, 1995). Patented split shank design delivers maximum retention with minimal stress.

Flange and second tier preparation provides greater stability of the post and dissipate forces of occlusion that otherwise fracture the post or root. The access posts are ball and socket attachment which allows rotation of denture attachment. Thick walled hollow tube design which provides strength of solid shank post (Cohen *et al.*, 1993; Rovatti *et al.*, 1994). 3-5ponds of retention is provided by the standard nylon caps available with this access post kit. The nylon caps are economical and can be replaced when required.

Conclusion

Overdenture rehabilitation with root supported overdenture is an effective treatment modality. Reduction in the shrinkage of surrounding bone, pressure on alveolar ridge is prevented by overdenture. The primary goals of an overdenture can be achieved by access post retained denture and the passive post also provides necessary strength, retention and stability a restoration requires. This attachment is patient friendly and easy to clean. The results are excellent if proper oral hygiene is maintained and appropriate case selection is done.

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REFERENCES

- An evergreen prosthodontics treatment solution for edentulous patient. *Indian Journal of Basic and Applied Medical Research*; December 2015: Vol.-5, Issue- 1, P. 478-483.
- Cohen BI, Condos S, Deutsch AS, Musikant BL. Cyclic Fatigue testing of six endodontic post systems. *J Dent Res.*, 1993; 72:305
- Cohen BI, Deutsch AS, Musikant BL. Cyclic Fatigue testing of six endodontic post systems. *J Prosthodont* 1993; 2:28-32.
- Cohen BI, Musikant BL, Deutsch AS, Comparission of retentive properties of two hallow post system to a solid post design. *J Prosthet Dent*, 1993;70 234-238.
- Cohen BI, Musikant BL, Deutsch AS. The access post and its clinical use. *Dent Today*, 1995;14:88-89
- Essentials of complete denture prosthodontics. Sheldon wrinkle-second addition
- Guttal SS, Tavargeri AK, Nadiger RK, Thakur SL. Use of an Implant O-Ring Attachment for the Tooth Supported Mandibular Overdenture: A Clinical Report. *European Journal of Dentistry*, 2011; 5(3):331.
- Kenney R, Richards MW. Photoelastic stress patterns produced by implant-retained overdentures. *The Journal of Prosthetic Dentistry*, 1998; 80(5):559-64.
- Oral rehabilitation using customized intra-radicular dalbo attachments. *Journal of Interdisciplinary Dentistry / Jan-Apr 2013 / Vol-3 / Issue-1.*
- Overdenture made easy. A guide to implant and root supported prostheses. HaroldW. Preiskel.
- Overdenture with access post system: a case report. *International Journal of Dental Clinics*, December 2012 : volume 4 issue 2
- Prosthodontic rehabilitation using attachment retained overdenture-case report. *IOSR Journal of Dental and Medical Sciences*, Volume 14, Issue 8 Ver. II (Aug. 2015), PP 17-23.
- Rahn AO, Heartwell CM Jr, Textbook of complete dentures; , 5th edn (Lea & Febiger,U.S)
- Renner R, Gomes B, Shakun M, Baer P, Davis R, Camp P. Four-year longitudinal study of the periodontal health status of overdenture patients. *The Journal of Prosthetic Dentistry*, 1984; 51(5):593-8.
- Rovatti L, DallariD, Mason PN. A new system of endodontic retention. *J Attualita Dentale* 1994:18
- Sunil, D. and D Neha, Access post overdenture-a solution for challenging edentulous situation. *Bangladesh Journal of Medical Sciences*, Volume-10 No3 July 11.
- Tooth supported overdenture: A concept overshadowed but not yet forgotten. *Journal of Oral Research and Review*, year-2015 volume 7 issue-1 page, 16-21.
