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Designing a smile: A case report

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Abstract
Most of the patients report significantly more problems adapting to their mandibular denture due to a lack of comfort because of decreased retention, stability and inability to chew and eat mainly because of increased residual ridge resorption. In order to decrease residual ridge resorption and to increase retention and stability, overdenture as a treatment modality has been successful. Recent scientific studies carried out over the past decade have determined that the benefits of a mandibular two coping retained overdenture are sufficient to propose the two implant over denture - rather than conventional denture - as the first treatment option. This article presents two tooth supported conventional over denture: a case report.

Keywords: overdenture, prosthesis, residual ridge resorption, stability

Introduction
The prosthetic management of edentulous patient has long been a major challenge for dentistry [1]. The prospect of losing all his teeth can be very disturbing for a patient. It also brings down patient's morale, as it is an indirect reminder for being dependent on others and losing senescence. In such conditions, tooth retained overdenture option, as preventive prosthodontics treatment modality becomes a boon for edentulous patients because of its innumerable advantages and also due to a simple and cost effective treatment than the implant overdentures [2]. Overdenture takes advantage of few firm teeth that are present in an otherwise compromised dentition, which can be retained and used as abutments for overdenture fabrication. This helps improve the retention and stability of the final prosthesis significantly. Bone is a dynamic tissue. The extraction of teeth results in the initiation of the bone resorption pattern. However, when tensile stress is received by bone, additional bone formation takes place. Such stresses occur when occlusal forces are transmitted to the alveolar bone by the periodontal ligament of the preserved teeth, which are used as abutment teeth for overdentures, and prevent residual ridge resorption and this principle helps preserve bone. The concept of overdentures may not be the definitive, but it is a positive means for delaying the process of complete endentulism and helps in the preservation of bone [3].

Indications and contraindications [4]

Indications	Contraindications
• Four or less retainable teeth in the dental arch. • Malrelated ridges. • Loss of teeth in one dental arch while other is dentulous. • Those with unfavorable tongue positions, muscle attachments, or residual ridges. • Those who may encounter difficulty with stability or retention of conventional complete dentures.	• Patients who cannot be motivated to develop the desired level of oral hygiene. • Systemic complications make the use of necessary clinical procedures unsatisfactory. • There is inadequate interarch distance.

General considerations during diagnosis and treatment planning
- **Periodontal consideration**: An important periodontal requisite with over denture abutment is adequate zone of
- attached gingiva. Therefore Periodontal inflammation, pocket formation, bony defect and poor zone of attached gingiva must be eliminated before starting treatment.

- **Endodontic consideration:** caries involvement must be considered and should be minimal in prospective abutments. Carious lesions must be restorable. Endodontic treatment should be performed as it resulte in crown root ratio which is more favorable and moreover clinical crown reduction provides interocclusal clearance for placement of artificial teeth. [4]
- **Selection of abutment teeth:** two cuspid and two second molar abutments typify an optimal abutment distribution for one arch. The rectangular distribution provides for maximum stability and support of the restoration. Mandibular cuspids are most often utilized since they are usually the last teeth to be lost [4].

Advantages and disadvantages: [6, 7, 8]

Advantages	Disadvantages
• Preservation of alveolar bone. • Proprioception. • Enhanced stability and retention • Maintenance of vertical dimension of occlusion. • Useful for patients with congenital defects such as oligodontia, cleft palate, cleidocranial dystosis and Class III occlusion. • Overdenture can be easily converted to complete denture over a period of time.	• Meticulous oral hygiene in order to prevent caries and periodontal disease. • The over-denture tends to be bulkier and overcontoured • Encroachment of inter-occlusal distance is another disadvantage. • Expensive approach with frequent recall check-ups of the patient than a conventional removable complete denture.

Case report

A 62-year-old patient came to the Department of Prosthodontics Government Dental College shimla to get her missing teeth replaced. She had a completely edentulous maxillary arch. Mandibular arch was partially edentulous with Kennedy type I modification 1. 34 and 44 were present [Figure 1, 2]. The patient gave a history of loss of her missing teeth over a period of 15 years due to multiple caries and periodontal problems. On examination no mobility and periapical pathology was noticed in the clinical and radiographical examination. Hence, it was decided to retain first premolars, proceed with intentional root canal treatment (RCT) followed by coping to the two teeth. Maxillary conventional and mandibular over denture was planned to reduce the impact on the bone by conventional denture in lower and also to improve the retention and stability.

A tentative jaw relation of the diagnostic casts was done to assess the inter-arch space. It was found to be sufficient for an overdenture with short copings. After intentional root canal of 34 and 44, they were prepared with tapered round end diamond point with chamfer finish line made. (figure3) Impression of abutment teeth was obtained for fabrication of copings. The copings obtained were checked for fit in the patients' mouth and finally cemented with glass ionomer cement [Figure 4]. The thickness of the copings should not be more than 1 mm.

Primary impression for the maxillary arch was made with Impression compound and with alginate for the mandibular arch. (figure5) The impressions were poured and special trays were fabricated with self-cure acrylic resin with double spacer over abutment teeth (figure 6) Border molding was done for both the arches with low fusing compound. Final impression for the maxillary cast was made with zinc oxide eugenol (ZOE) impression [Figure 7]. Mandibular final impression made with regular body elastomer followed by wash impression by light body [Figure 7]. Master casts were prepared by pouring the impressions in Type IV gypsum.

Copings on the master cast were covered with wax and record base fabricated after applying separating media. Placement of wax over abutments prevents the fracture of abutment during removal and placing of denture bases during different laboratory procedures. Occlusal rims were fabricated; maxillomandibular relations recorded and transferred onto the semi-adjustable articulator with the help of face-bow. (figure8) Teeth setting was done, evaluated in the patient's mouth for phonetics, vertical and centric relation and finally esthetics. Vertical dimension was verified and centric and eccentric contacts checked. (figure9) Patient's approval was taken, and the curing of thes final denture was done in heat-cure acrylic resin. Denture was cured and polished. Denture bases were adjusted to the supporting mucosa using pressure indicator paste. (figure 10 a,b,c)

Discussion

The concept of tooth support for complete dentures permits the dentist to assume a significant role in preserving natural teeth and supporting structures. In many instances, teeth that would otherwise be removed can be maintained to help support complete dentures. [4] Frequently, only one natural tooth can successfully help support a denture. In case of overdenture prosthesis, proprioception is maintained [8], there is the presence of directional sensitivity; dimensional discrimination; canine response and tactile sensitivity [9]. Rissin *et al*. in 1978 [10] compared masticatory performance in patients with natural dentition, complete denture and over denture. They found that the over-denture patients had a chewing efficiency one third higher than the complete denture patients [10].

The success of the tooth-supported overdenture treatment depends upon the proper selection for the particular case. These days implant treatment has become the benchmark, thus tooth supported overdentures have taken a backseat as a result of competitive commercialization of implants [11]. Over denture patients have a chewing efficiency one third higher than the complete denture patients [10], which suggests that tooth supportessd Overdenture is very much effective both functionally as well as esthetically, moreover it does not put heavy burden on patients pocket as the implant supported prosthesis hence this treatment modality should be considered in our regular clinical practice.

Fig 1

Fig 2

Fig 3

Fig 4

Fig 5

Fig 6

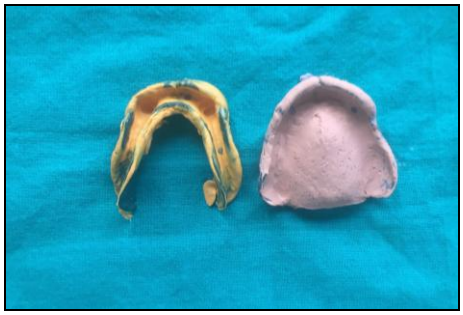

Fig 7

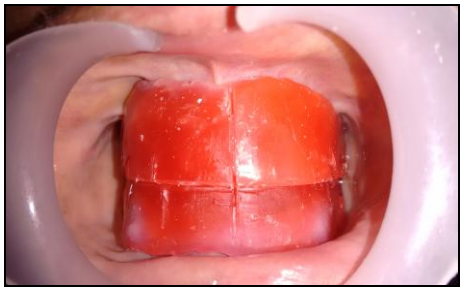

Fig 8

Fig 9

Fig 10 (A)

(B)

(C)

References

1. Prakash VS, Shivaprakash G, Hegde SN. Four and two tooth supported - Conventional over denture: Two case reports. Int J Oral Health Sci. 2013; 3:61-4.
2. Crum RJ, Rooney GE Jr. Alveolar bone loss in overdentures: A 5-year study. J Prosthet Dent. 1978; 40:610-3.
3. Samra RK, Bhide SV, Goyal C, Kaur T. Tooth supported overdenture: A concept overshadowed but not yet forgotten!. J Oral Res Rev. 2015; 7:16-21.
4. Morrow RM, Feldmann EE, Rudd KD, Trovillion HM. Tooth-supported completed dentures: An approach to preventive prosthodontics. J Prosthet Dent. 1969; 21:513-22.
5. Brewer Morrow RM. Over Dentures. 2nd ed. St. Louis: Mosby; 2nd ed, 1980.
6. 6 Morrow RM, Rudd KD, Birmingham FD, Larkin JD. Immediate interim tooth-supported complete dentures. J Prosthet Dent. 1973; 30:695-700.
7. Dodge CA. Prevention of complete denture problems by use of overdentures. J Prosthet Dent. 1973; 30:403-11.
8. Thayer HH. Overdentures and the periodontium. Dent Clin North Am. 1980; 24:369-77.
9. Manly RS, Pfaffman C, Lathrop DD, Keyser J. Oral sensory thresholds of persons with natural and artificial dentitions. J Dent Res. 1952; 31:305-12
10. Rissin L, House JE, Manly RS, Kapur KK. Clinical comparison of masticatory performance and electromyographic activity of patients with complete dentures, overdentures, and natural teeth. J Prosthet Dent 1978; 39:508-11.
11. Williamson RT. Retentive bar overdenture fabrication withvpreformed castable components: A case report. Quintessence Int. 1994; 25:389-94.