

A Tooth Supported Over-Denture Using Precision Attachments: A Case Report

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ABSTRACT

Due to different reasons like cost, incomplete knowledge of indications and applications, the precision attachments are usually neglected or ignored to use for prosthesis. Precision attachments owing to its advantage of additional retention increases the efficiency of tooth supported over-denture and gives the patient a sense of excellent satisfaction by increasing retention. A prosthodontist who is aware of precision attachments will prefer treatment by using them rather than opting the choice of extraction of teeth and proceeding to implant supported prosthesis, thus aiding in the conservative approach of preservation of teeth. In this case report we have described a tooth supported over-denture using precision attachments for the mandibular arch.

KEYWORDS: Leverage Forces, Over Denture, Precision Attachments

INTRODUCTION

Devan stated that "perpetual preservation of what remains is more important than the meticulous replacement of what is missing". So, inspite of rapid development of implant dentistry preservation of teeth that are present is more important.¹ Precision attachments have advantage of additional retention and also help to obtain parallelism on non-parallel attachments. In this case report, we planned for an over denture in maxillary and mandibular arches by preserving some teeth, and precision attachments are given on mandibular teeth.

CASE REPORT

A patient named Umamaheshwarudu (Fig No.1) of age 51 Yrs came to the department of prosthodontics, G.Pulla Reddy dental college

and hospital, Kurnool. Teeth present in this patient are 13, 14, 16, 23, 27,33, 34, 35, 43, 44. After examination of OPG (Fig No.1)

We planned for an over-denture by retaining 14, 23, 34, 43 teeth. Remaining teeth were extracted under local anaesthesia. After a sufficient period of healing tentative jaw relation was done to check the inter arch space. After observing the space we planned to give precision attachments on mandibular teeth, and copings were planned on maxillary teeth. So, Root canal treatment was performed on remaining teeth, and teeth were reduced to cervical level (Fig No.3-5).² Post spacing preparation was performed on the teeth and pick up impressions were made of edentulous

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arches along with post space in indirect technique using polyvinyl silicone impression material. Cast was poured using die stone.

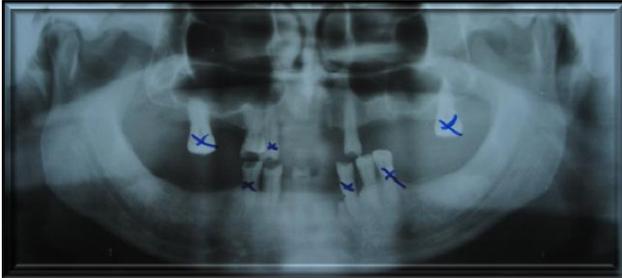


Fig 1: OPG of the Patient



Fig 5: Reduced teeth in mandible



Fig 2: Pre-operative Photograph of patient



Fig 6: Upper Teeth restored with casted copings

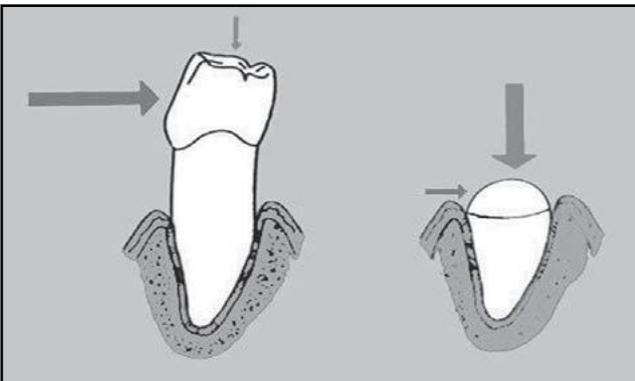


Fig 3: The reduction of clinical crown to cervical level



Fig 7: Stainless steel housings placed in the position. Lower teeth restored with casted copings along with attachments



Fig 4: Reduced teeth in maxilla



Fig 8: Checking denture fit on housing

Post and coping along with male attachments was fabricated. Meanwhile a complete denture was fabricated in the conventional manner. The attachments that are placed have to be parallel to each other to avoid unwanted leverage forces. So, they were placed parallel to each other using a surveyor. For maxillary teeth, copings were made with post. For mandibular teeth as mentioned previously precision attachments are placed on teeth (Fig No. 6). For mandibular arch stainless steel housing with elastic caps has to be incorporated in the denture so to perform this an opening was made at areas of attachments in the mandibular denture (Fig No.7,8). Copings with elastic caps are placed on the attachments present on the teeth. Self-cure acrylic material was used to incorporate the copings in the denture. The final prosthesis was shown in the (Fig No.9). Recall check-up was done, and patient was satisfied with the prosthesis.



Fig 9: Postoperative view

DISCUSSION

It is always better to preserve teeth whenever possible as given by Devan. Preserving teeth help patient to reduce bone loss, and proprioceptive impulses of patient are not lost helping the patient to give a sense of chewing. From the early 20th century since when the precision attachment was invented by Dr.Herman Chayes the use of precision attachments is increasing for removable as well

as for implant supported prosthesis. They have an advantage of less post-operative adjustments and better patient comfort. Generally, they are indicated for distal extension cases, long edentulous ridges and non-parallel abutments.³ There are hundreds of varieties of attachment systems. Selection of the attachments is crucial according to the requirement of the case. Sufficient space is always needed for an attachment to place. Selection of attachment depends on vertical space available, crown/root ratio, type of coping, number of teeth support, type of opposing dentition. It also depends on angulation of the root to the occlusal plane, amount and quality of bone support, location of abutments, chewing pattern and the musculature of the patient and patient desire. Rhein stud attachments are used in this case as male component due to the available space here.⁴ Other advantages of these attachments are minimum leverage action and simple design to fabricate. Stainless steel caps with elastic retentive caps are to be given as female component. They are, usually available in normal and microforms. Here normal size is used. White elastic retentive caps which give standard retention were selected.

CONCLUSION

Over-denture with precision attachments is the best option for treatment as an alternative for the extraction of teeth and placement of implants. Motivation of patient for this treatment is primarily important as he has to maintain good oral hygiene. By preservation of teeth and bone the physiological dimension and proprioception of patient can be maintained.⁵

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