

Case report:

An evergreen prosthodontic treatment solution for edentulous patient

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Abstract:

Hybrid prosthesis supported by natural teeth should be executed and widely used in clinical practice whenever the clinical condition suggests it¹. Extra coronal or intra coronal attachments increases the retention of denture². Among the attachments, the extra radicular attachment of bar type helps in splinting the abutment teeth and retention of appliance. Improved retention, stability, chewing efficiency and decrease in alveolar bone resorption can also be achieved by custom bar supported overdenture and is a good alternative treatment modality³.

Key words: bar attachment, extra radicular attachments, overdenture

Background:

Achieving excellence in esthetics, stabilization and retention of the prosthesis with favorable distribution of forces for the preservation of remaining structure is a challenge in prosthodontics. One of the most effective way of preserving the residual ridge and proprioceptive feedback is by retaining the roots and fabrication a overdenture⁴

The real beauty of the overdenture is save the teeth that can be retained for a while and keep patients happier for longer. The best implant in the world is natural teeth or their retaining roots. An removal partial denture or complete denture that rests on one or more remaining natural teeth, the roots of natural teeth and or dental implants (GPT-8). Retention of any tooth for an overdenture preserves a portion of one of the major sensory inputs. Muscles and TMJ contribute to an overall response along with the input of other receptors in the mouth. Extraction of all teeth results in total loss of all input from periodontal ligament receptors where use of an overdenture preserves the sensory input. The ultimate objective of the prosthetic service is to

return the patient to as near a normal function as possible.

The basic overdenture Concept is to preserve the residual soft and hard tissues. Incorporating the use of attachments retentive devices mechanical stabilization can be improved with the basic principle of complete denture.

Importance:

Maintains teeth as part of residual ridge.

Decrease in rate of resorption

Increase in patient manipulative skills in handling denture⁵.

Advantages:

Preservation of alveolar bone

Proprioceptive response is preserved

Retention

Support

Simple approach

Periodontal maintenance

Harmony of arch form

Ideal occlusion

Disadvantages:

Caries susceptibility

Periodontal breakdown of abutment teeth

Bony undercuts may cause either over contouring or under contouring of the denture

Encroachment of interocclusal distance

Esthetics

Attachments:

1 intra radicular - zest

2 extra radicular - a) Bar - dolder

Hader

Baker

Ackermann clip

b) Stud – dallabona

Gerber

Ceka

Rothermann

Introfix

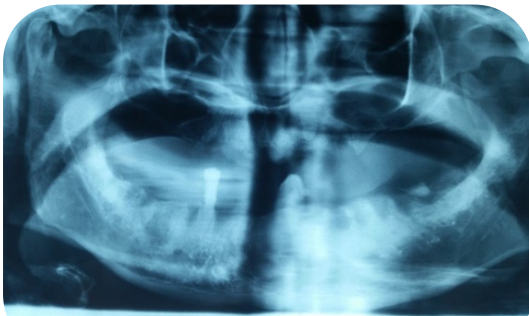
Micro fix

c) axillary - plunger type and screw type.

Case report:

55 year male patients reported to the department with the chief complain of inability to chew food properly due to multiple missing teeth. The intraoral examination revealed partially edentulous mandibular teeth (figure-1). The hopeless teeth were extracted retaining canine and first premolar (figure-2).

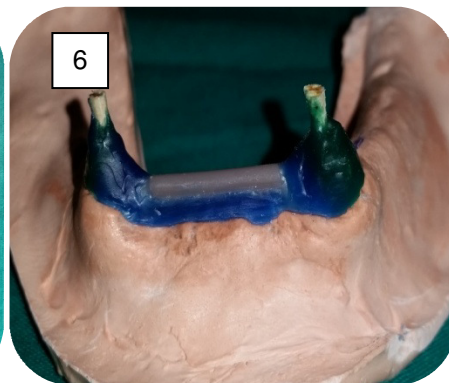
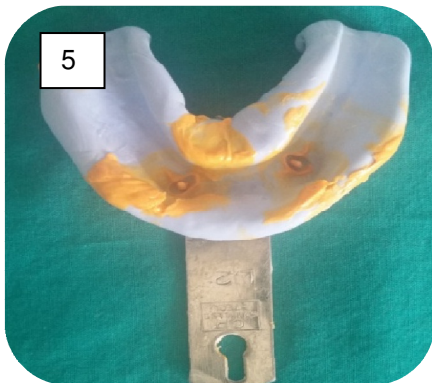
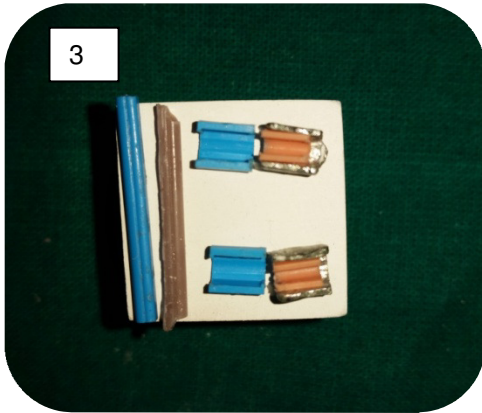
Figure-1 & 2



The different treatment options available to the patient were Extraction of remaining teeth followed by conventional complete denture Extraction followed by implant supported Tooth supported overdenture . It was decided to use remaining teeth as abutment and fabricate a bar retained mandibular overdenture based on existing condition of the remaining dentition and financial status of patient. Duplication of prefabricated bar and cast able box was done

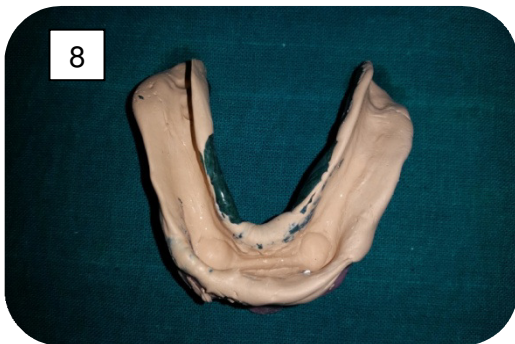
using light body impression material and casting of castable box was done (figure-3).

The teeth were endodontically treated; tooth preparation was done by giving chamfer finish line (figure-4). Post space was created and impression was made (figure-5). The cast thus obtained was used to record the extension of post space by using inlay wax. The customized bar was attached to coping wax and cast with the coping (figure-6).



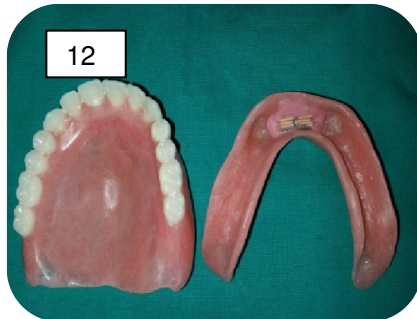


Once finished the bar with attached coping was cemented in patients mouth and preliminary impression was made (figure-7). Custom tray was fabricated, border moulding done and final impression was made (figure-8).



Denture base occlusal rims were made followed by jaw relation. Try in done and further procedure carried out (figure-9). After acrylicization the space was created for castable box with retentive clips in the tissue side of mandibular denture, placed into position using self-cure acrylic (figure-11). The retentive clips are within the casted castable box and both these components are present on tissue side of prosthesis.





Advantages of bar attachment:

Relatively rigid connection

Joining bar resolves forces applied to the roots in a more apical direction than would be the case if roots were unconnected.

Disadvantages:

Vertical and buccolingual space requirement will limit applications.

Plaque accumulation on the appliance

Frequent loosening of clip.

Discussion:

The case involved preservation of one canine and first premolar as abutments and splinted together with bar is more advantageous than using separately. The abutments were not parallel to each other with compromised periodontium. The bar and sleeve joint gives retention and the movement of the denture relative to the abutment. The preservation of remaining alveolar supporting bone and increased stability and retention of denture is due to retaining the abutment and by

using attachments further increase in overdenture retention can be achieved. In Hader bar clips are placed on the bar in different planes around the arch. If more retention is needed plastic clip can be transformed to a metal clip. 20-22mm is the ideal length of hader bar and to accommodate metal clips hader bar provides mechanical snap retention. Plastic clips are recommended than metal clips⁶.

Advantages of metal clip: resistant to wear.

Bar dimension of small one can be used

Disadvantage : requires more chair side time

Removal of metal clip is difficult compared to plastic clip.

Maintenance:

Prosthesis removed with care as during insertion

Patient must be recalled at regular intervals

Home care maintenance must be practiced that help patient to maintain good oral hygiene (dental floss, stimudent)⁷.

Conclusion:

By prosthodontics treatment the ultimate goal achieved should be to do no harm to the present stomatognathic system. The decision to which attachment is best depends on the particular type of case, skill of the operator, familiarity of the

procedure and oral hygiene maintenance of the patient. Overdenture is the outstanding mode of treatment. Dental treatment planning and patient satisfaction can be enhanced by incorporating of attachments in overdenture, which opens up another dimension to everyday dental practice.

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