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ATTACHMENT-RETAINED TOOTH-SUPPORTED IMMEDIATE OVERDENTURE – A CASE REPORT

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Introduction

Over denture treatment uses a removable complete denture that overlies retained teeth, tooth roots, or dental implants. This treatment is not a new concept and practitioners have successfully employed existing tooth structures or retained roots to assist with complete denture treatment for more than a century.[1,2] The presence of a healthy periodontal ligament maintains alveolar ridge morphology, whereas a diseased periodontal ligament, or its absence, is associated with variable but inevitable time-dependent reduction in residual ridge dimensions.[3] To avoid this, two or more, coronally modified or restored retained teeth abutments are frequently endodontically prepared and are used as abutments for an over denture. The objective is to distribute stress concentration between retained abutments and denture-supporting soft tissues.[4,5] Retained root abutments can give better retention, support, and stability to an overdenture and also provide proprioception which would otherwise be lost with conventional denture treatment. Attachments may not be used by many dental professionals for reasons such as cost and reluctance to grasp the intricacies of their indications and applications. An attachment retained dental prosthesis can improve patient aesthetics and facilitate function.[6-8] Implant retained prosthesis is an option but is sometimes not possible due to insufficient amount of bone or economic reasons.

Case Report

A 40-year-old male patient reported to the Department of Prosthodontics and Crown & Bridge, with chief complaint of difficulty in chewing due to missing teeth. The patient expressed concerns about his inability to chew effectively; dissatisfaction with smile & aesthetics. There was no relevant medical history affecting prosthodontic treatment. Intraoral examination revealed partially edentulous maxilla and mandible with multiple RCT treated teeth with generalised attrition.

Fig. 1 Intraoral frontal view

Radiographic examination revealed the bone support & crown-root ratio was adequate for mandibular first premolars; to be taken in to consideration for over denture support.

Fig. 2 OPG

The different treatment options available for this patient's mandibular arch were— extraction of the remaining teeth followed by immediate denture, implant supported immediate over denture and tooth immediate supported over denture.

The patient rejected the option of an implant retained prosthesis because of the need for additional surgery, the longer duration of treatment phase and related expenditure. It was planned to construct a maxillary immediate denture and a mandibular immediate over denture with extra coronal attachments.

An ortho pantomo gram (OPG) and diagnostic casts were made.

Fig. 2 Primary impressions

Sectional tray border moulding and final impressions are done.

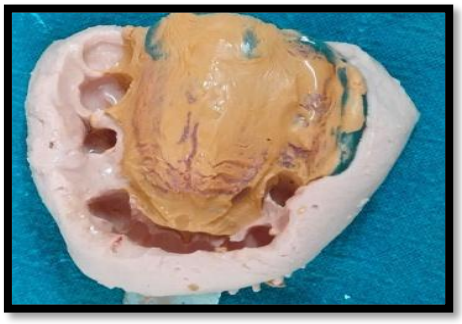

Fig. 3

After jaw relation casts were mounted.

After trial, spatial cast modification was done and to receive the immediate denture.

Fig. 4

Denture was acrylised.

Fig. 5

The treatment plan was presented to the patient and his consent was obtained.

Elective endodontics was carried out with teeth 44 and 34 and they were prepared in a dome-shaped contour and hemi spherically rounded in all dimensions with approximately 1 mm projecting just above the gingiva.

Fig. 6

Using, a Peeso reamer, GP was sectionally removed. The entire length of the post space was prepared using the primary reamer. Apical end of post was trimmed to modify length, ensuring that flange and second tier were fully seated. The canal was etched and dried using paper points. Using lentulospiral, the post was luted with resin cement.

Fig. 7

Fig. 8

Extraction was done followed by denture insertion.

Fig. 9

Nylon caps were placed to cover the height of contour of the ball of post in the recall appointment; along with the suture removal.

The nylon female caps were placed on ball of the post. Bioink was sprayed on the intaglio surface of the denture and was seated over the nylon caps. Denture was removed, relieved in

the area marked to make space for ball of the post. Auto-polymersing acrylic resin was placed in the relieved area.

Denture was seated and patient was guided to close in centric.

Fig. 10

After resin was set, denture was removed with pick up attachment cap housed in the intaglio surface of the denture. Flash was trimmed and rechecked for the fit and occlusion.

Fig. 11

Discussion

Attachment-retained tooth-supported immediate overdentures offer several advantages, including immediate restoration of function, aesthetics, preservation of residual ridge integrity, and improved patient satisfaction. The over-denture tends to be bulkier and over contoured encroachment of inter-occlusal distance is a disadvantage. This treatment modality is an expensive approach with frequent recall check-ups of the patient than a conventional complete denture. It requires careful planning, execution, and maintenance to ensure long term success.

Conclusion

Attachment retained tooth supported immediate overdentures represent an effective treatment option for patients' requiring rehabilitation of severely compromised dentitions, advocated for total extraction.

By utilizing retained teeth as abutments for attachments, dentists can achieve favourable functional and aesthetic outcomes, enhancing the quality of life for edentulous patients.

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