POST-CORE RETAINED TOOTH-SUPPORTED MAXILLARY FIXED DENTAL PROSTHESIS: A CASE REPORT

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SUMMARY

A female of 52 years age was complaining about aesthetics, mastication and speech. Clinical examination revealed advanced wear in maxillary anterior teeth. Orthopantomograph showed healthy alveolar bone and ridges. Post-retained fixed prosthesis was provided as method of rehabilitation. This case report describes the details of prosthesis that enhanced the aesthetics and improved mastication.

Key Words: Post-retained fixed dental prosthesis, Root canal therapy, Metal-ceramic fixed prosthesis, oral rehabilitation.

INTRODUCTION

Prosthesis are used for different dental treatments to rehabilitate jaw, chewing ability, to improve aesthetics and speech. A dental prosthesis may be luted, screwed or mechanically attached to natural teeth.1 A fixed or removable appliance used to replace one or more loose or missing natural teeth.2 Edentulism is a debilitating and irreversible condition and is described as the “final marker of disease burden for oral health”.3,4 Many dental professionals will agree that cement-retained crowns or screw-retained crowns are a necessity for multiple units.6 Individual philosophy plays a huge role.7 The goal of dentistry is for patients to keep all of their teeth throughout their lives in health and comfort.8 It is the dentist’s responsibility to help the patient take decisions on the options available, based on their unique situation and circumstances.9

CASE REPORT

Oral examination: Gingiva and ridges were found healthy. In maxilla, eight teeth were present out of sixteen. Upper right central and canine were carious. On same side lateral second premolar and molar had broken down roots. Left central, lateral and canine showed attrition. Left upper 2nd molar was grossly carious. In lower jaw, 12 teeth were present.

The left upper second premolar canal was blocked (pulp stone). The upper right molar had broken down root. In the lower arch, both sides had sound premolars. First molars on both sides were missing. (Fig 1, 2, 3)

Treatment plan

Patient wanted to save remaining upper and lower teeth. All broken down roots were removed surgically. Those which could serve as abutments were endodontically treated.

Post selection

Prefabricated posts are available in different sizes and shapes: First step was to select the posts that best fitted in the canal.12 Post system contains at least 6 different thicknesses and 3 different lengths. Moreover, the surface of the posts can be smooth or threaded (in case of metal screw posts).

Insertion of screw posts

Purpose of the post is the retention of core and support of prosthesis.14 Selected size of the 3 screw posts were in the canals.

Cementation of the Post

Composite or Glass Ionomer Type-II

Thin mix of cement was coated around threaded portion of post, and also applied in the treated root canal. The post were gently inserted in the canal till the cement was set. Fig 8, 9, 10
Fixed dental prosthesis

Fig 1

Fig 2

Fig 3: OPG X-ray before treatment

Fig 7: Screw Post box

Fig 8: Posts in place

Fig 4: After Endodontic Treatment

Fig 5

Fig 6: OPG of Root Canal Treatment

Fig 9: View of core post cementation

Fig 10: After post cementation View of core
Fig 11: Alginate impression

Fig 12, Fig 13, Fig 14: Metal frame is tried in and verified for fit

Fig 15

Fig 16

Fig 17

Fig 18

Fig 19

Fig 20
After post is properly cemented into the root canal space, a core material, normally dental cement, is packed around the cervical post until the material is set. The core restoration replaces lost dentine, and provide internal support and retention for the crown and prosthesis also ensure resistance against cervical tooth fracture.

Cementation of fixed bridge

After confirmation of the patient’s acceptance i.e, occlusion, lip support and teeth form and comfort, bridge fitting was done with care, as it acts as a barrier between microbes and restoration - seals the space between the tooth and restoration. The Bridge was seated by digital pressure and held firmly in place of prepared tooth and occlusion was rechecked. Fig 19-21.

DISCUSSION

Esthetic dentistry has made great advancement in last two decades. Various materials and techniques have evolved lately. Advance research in Composite Resins and Ceramics has made the result more predictable. However, basic concepts of esthetics dentistry are often neglected and they compromise the results, jeopardizing the outcome of treatment. This clinical case relied on post and core tooth supported fixed prostheses to establish vertical dimension of occlusion, in an uncomplicated manner with minimum patient discomfort. Oral hygiene maintenance and regular follow up of patients wearing Fixed Partial Dentures should be highlighted in order to ensure long term success of such prosthesis. For many years, custom cast metal posts were considered the standard. Since many years cast metal posts have been a favorable choice as they require less chair time and were easily handled. It is important to consider the advantages and limitations of the screw-retained versus cemented prosthetic restorations. The Bridge is more esthetic in certain circumstances, as in this case majority of teeth were lost in upper arch and the remaining teeth required strength which could either be provided by a screw post or an implant. The implant was not possible for this patient due to economical, lengthy and painful procedure. The custom cast post and core system is still regarded as the restoration of choice for endodontically treated teeth when there is no coronal dentin. However the use of prefabricated post systems is better because all steps can be completed chair side and fair clinical success can be expected. Therefore using Screw-post retained Tooth supported fixed prostheses is important in this scenario to influence the longevity of the treatment. Many dentists are focusing on variety of implants but the screw post is easy to insert in root of the tooth, making it a less complicated procedure when compared with implant. It also prevents the stresses on alveolar ridge or saddle.

CONCLUSION

The purpose of this clinical report was to document the screw post prosthesis approach for rehabilitation of a patient to provide the strength to remaining natural teeth.

It has been reported and found previously through clinical research and practice that implants may be painful, costly and most importantly lengthy clinical procedure with more complications when compared with screw retained prosthesis. This case of screw retained prosthesis did not only rehabilitated the function but also improved the esthetic with less cost and time.

Therefore without criticizing the importance of implant, it would be emphasized that in a case like this screw retained prosthesis is more advisable.

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Fixed dental prosthesis

1

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