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REHABILITATION OF PARTIAL EDENTULISM IN POSTERIOR MAXIILA WITH IMPLANT CAN BE A VIABLE TREATMENT OPTION: A CASE REPORT

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ABSTRACT

Well planned dental implants can provide highly aesthetic and fully functional replacement of teeth where results are predictable and reliable. Choosing dental implants over fixed partial denture is advantageous because the procedure is non invasive to adjacent teeth. Overtime a single implant supported tooth can prove to be more cost effective than a three unit bridge, provided it is properly cared for. While fixed partial denture was selected by people for replacing teeth since years, modern dentistry has made dental implants a viable treatment option. This is a case report of partial edentulism in posterior maxilla rehabilitated with implant which is often considered arduous.

KEYWORDS: Dental Implants, Posterior Maxilla, Fixed Dental Prosthesis.

• INTRODUCTION

The various treatment modality for partial edentulism is either removable partial denture or fixed partial denture. Removable partial denture reduces the masticatory efficiency, taste perception, and may not be accepted by the patient psychologically and aesthetically. Dental implants have become predictable treatment options for applicable patients.[1] The quality and quantity of host bone are the determining factors for successful dental implants.[2] The anatomic location and plethora of complicating factors like quality and quantity of available bone, reduced interarch space, sinus approximation etc makes the placement of implant in

posterior maxilla a challenging task.[3,4] The quality of bone may be estimated via advanced radiological techniques and advancement in software technologies associated with implant placement made the job easier. In cases with adequate vertical dimension of residual alveolar ridge, conventional implants can be used with high survival rates and acceptable prognosis.[6]

- **Case Presentation**

A 56 year old female patient reported to the department with the chief complain of difficulty in chewing from right side due to loss of teeth in right upper posterior region. She was also concerned about aesthetics. On examination it revealed upper right first and second premolars were missing. Radiographic examination revealed the bone height in the edentulous region to be 14-15mm. The residual ridge had sufficient width present both mesiodistally and buccolingually and was covered by healthy mucosa. Patient had good periodontal health. After the initial intraoral examination treatment options of a fixed partial denture and implant supported prosthesis were discussed with the patient. She opted for the implant supported one as this was more predictable and conservative to tooth structure. Patient had no significant medical history. So in this case implant supported prosthesis was planned after through diagnosis of the position of the implant, pre-existing tooth form and position, its relation with the opposing arch, soft tissue anatomy, approximation to maxillary sinus, and dimensions of bone.

Two stage surgery was planned for this case. Patient was premedicated with antibiotics and NSAIDs for the surgical procedure.

Step 1

Prior to surgery diagnostic impressions for maxillary and mandibular arch were made with irreversible hydrocolloid and casts were poured. Diagnostic orthopantogram(OPG), casts and records were studied. A surgical template made up of clear acrylic was used and hole was made to decide the location of implant placement. These holes in the template were used in the surgery for making the pilot drill.

Step 2

A midcrestal full thickness incision was given. Once the flap was reflected the osteotomy began with pilot drill under copious irrigation and the final osteotomy was prepared by using sequential drilling. After final osteotomy preparation, the implant was placed with final

torque of 45/N cm2 by a torque measuring wrench with good primary stability parallel with the roots of adjacent teeth.

Step 3

Endosseous root form two implants (3.5x11.5)mm (Adin, Dental Implant system Ltd, Israel) were placed and then gently tapped into the prepared site.

Step 4

The cover screws were then placed, the implants were covered with the mucosa and sutures were paced.

Step 5

After 7 days sutures were removed and after 3 months prior to implant exposure, radiographs were taken to check for osseointegration.

Step 6

Stage II surgery was carried out after obtaining satisfactory results. The implants were exposed and covered with gingival formers to facilitate the development of a proper gingival emergence profile for the restoration.

Step 7

After a week the gingival former was removed and a smooth healthy gingival cuffs were found to have formed.

Step 8

Impressions were made with polyvinyl siloxane(Aquasil putty and light body, Dentsply, Germany) with the help of transfer copings to get the master casts. Implant abutments were placed.

Step 9

Wax patterns for copings were fabricated and casted.

Step 10

Try in of the copings were done in patient's mouth.

Step 11

The implant supported metal ceramic fixed prosthesis were fabricated and finally inserted in patient's mouth. Patient was instructed properly for maintenance of oral hygiene and prosthesis. Patient was recalled after 1 week, 1 month, 3 month to asses the implants and changes in crestal bone level. Patient was found to be quiet satisfied with the prosthesis both functionally and esthetically.

1 (a)

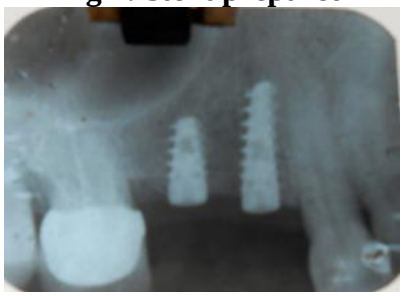
1 (b)

1 (c)

Fig 1: Preoperative intraoral view.

Fig 2: Stent prepared

Fig 3: Placement of implants in premolar region



Fg 4:Intraoral periapical radiograph after implant placement.

Fig 5:Impression with copings

Fig 6: Implant abutments in place.

Fig 7: Try in of metal copings.

Fig 8: Occlusal view after placement of metal ceramic crowns.

9 (a)

9(b)

Fig 9:Right and left occlusal view after placement of crowns.

Fig 10: Frontal view of patient after implant placement.

- **DISCUSSION**

Implant therapy is considered to be a valid therapeutic option rendering high implant and prosthesis survival rate than using fixed dental prosthesis for replacing single-multi unit gaps.[1,2] If all the governing factors of implant treatment such as the underlying bone quality and quantity, occlusion and interarch space are favourable then this treatment modality is no more a challenging task. Implants are effectively used with a survival rate ranging from 93-95%. In this case patient had no significant systemic diseases. Available bone height and width, density. adequate interarch space were in favourable condition to receive an implant. As patient was very much concerned about esthetics and was looking for conservative treatment dental implant was the only amicable solution for this case.

- **CONCLUSION**

It may be concluded that implant supported prosthesis are successful and predictable treatment modality. However, biological and technical complications were frequent but it could be a viable alternative to fixed dental prosthesis or removable partial denture for partial edentulism.

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