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CASE REPORT

IMPLANT RETAINED FIXED PARTIAL DENTURE – A CASE REPORT

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ABSTRACT

The use of dental implants in the maxillary anterior region to replace missing teeth has gained widespread acceptance as a viable treatment option.As compared to a traditional crown and bridge placement or a removable denture placement a dental implant supported fixed partial denture has a significant benefits. Non involvement of adjacent teeth, preservation of the residual ridge, better oral hygiene maintainance are the key ones.

Placing dental implant in the maxillary anterior region requires precise planning, surgery, and prosthetic treatment. As this is in the aesthetic zone, a multi-step process needs to be followed that includes esthetics, phonetics, lip support, bone support, occlusion, medical and dental history, and patient expectations. This clinical report details the treatment procedure for reconstruction of the anterior maxillary arch with an implant-supported fixed prosthesis. Diagnosis, treatment planning, and appointment sequence are described, as is the importance of establishing soft-tissue outcomes that enable the patient to properly clean the area.

KEY WORDS : implant supported fixed partial denture, anterior implant supported bridge,fixed bridge

CASE REPORT

A 61 years old female patient was referred to the Dental Institute with a chief complaint of wanting replacement of her anterior loose bridge. Patient had this bridge for about 25 years and it was provided as resolution for unesthetic appearance due to overlapping anterior teeth. The patient stated that her bridge started to be loose about 2 months earlier.

Her medical history revealed allergy to penicillin,medication for blood pressure,anxiety and depression.During her dental treatment she was diagnosed with papillary carcinoma stage I. She had thyroidectomy done and was put on thyroxin.

Her dental history revealed that she brushed twice a day and visited the dentist regularly. Her upper anterior teeth were removed due to esthetic problem and a bridge was placed.

Her social history revealed that she was married housewife with three children,a non smoker ,drank alcohol moderately and was a vegetarian.

An extraoral examination revealed a Class I skeletal base, with asymptomatic bilateral clicking on the TMJ and no abnormality detected in lymph node.

An intraoral examination revealed fair oral hygiene with localized inter-proximal plaque and supra and subgingival calculus .

Periodontal probing depth range between 3-8mm ,bleeding on probing and no teeth mobility.

Examination of teeth revealed the following:

Missing teeth:UR1,UR2,UR8,UL1,UL2,UL8,LR5,LR8,LL6,LL8.

Amalgam fillings : UR7,UL5,UL6,UL7,LR7,LL5,LL7

Metal ceramic crown on LR4 and full gold crown on Lr6

Fixed partial denture with UR3,UR4,UL3,UL4 as abutments and UR1,UR2,UL1,UL2 as pontics

Relevant radiographic findings : Root canal treatment on UR3 and UI3.

Apicectomy on Ur3

Caries on UI4

Un-erupted LR8, UR8 and UI8

Diagnosis : Impacted LR8 , UR8 and UL8 Localized severe chronic periodontitis on UL4 with caries, Failed maxillary anterior fixed-fixed bridge

Treatment goals : The main treatment goals were restoration of edentulous areas,improve esthetics and function and quality of life while at the same time preserving the remaining soft and hard tissues and not causing more harm

Treatment provided: The treatment provided was divided into stabilization,diagnostic ,reconstructive and maintainance phases.

1. Stabilisation phase : This included oral hygiene instructions, suprgingival scaling and extraction of UL4 after sectioning it from bridge.

2. Diagnostic phase : Upper and lower Alginate primary impressions were taken for study casts with face bow transfer record . Dismantling upper anterior fixed-fixed bridge was done . UL4, UL3, and UR3 were deemed to be unrestorable and hence were extracted (Fig 1).

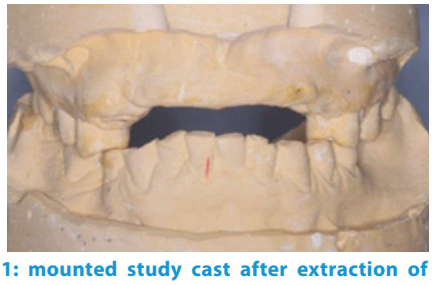

Figure 1: mounted study cast after extraction of anterior maxillary teeth.

3. Reconstruction phase: In the reconstructive phase the goal was to place an implant retained metal ceramic fixed partial denture in the maxillary anterior segment and a mandibular metal ceramic cantilever bridge with LR6 as abutment was planned to replace

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LR5.The gold crown on LR6 was removed.

An immediate provisional upper partial denture was constructed to replace the upper anterior missing teeth after extractions. Copy of the upper partial denture was made to construct a radio-graphic stent for CT scan for further assessment .Four implants(name?)were placed on at the position of UL4, UL1 ,UR1 and UR4 . An open tray impression technique was employed. Healing caps placed on the fixtures were removed and long impression copings were screwed on to each of the four implant fixtures. The stock impression tray was modified to create window for the coping screws. A mandibular primary impression was made in alginate. The casts were mounted in ICP.

At the following appointment the screw-retained temporary bridge was tried-in, adjusted and fitted. The access holes were sealed with PTFE tape and composite resin. The occlusion was checked in ICP and on excursions The patient was reviewed after 2 weeks. The patient was happy with the appearance whilst maintenance was satisfactory. In the meanwhile lower anterior composite build up was done to improve the alignment of the teeth.The maxillary master impression was made in a similar way as described above for temporary bridge. The mandibular master impression was also made using light and heavy viscosity addition silicone to fabricate the conventional cantilevered bridge to replace LR5. A verification jig was constructed to check the accuracy of the master cast. The jig was tried in patients`s mouth and made sure that it was passive and used the for jaw registration. The customized abutments were screwed in and the metal framework was tried (Fig 2). The two definitive bridges were cemented by Resin modified class ionomer (Aquacem) (Fig 3).The mandibular conventional cantilevered bridge replacing LR5 with LR6 as the abutment was cemented with proper isolation by resin modified glass ionomer cement. Oral hygiene instructions were given to the patient .

Figure 2 : try-in of metal framework

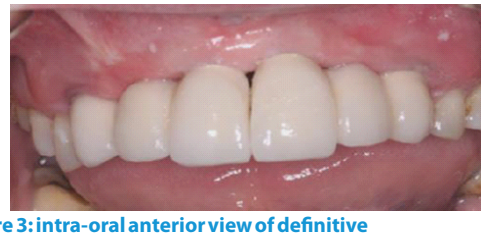

Figure 3: intra-oral anterior view of definitive

4. Maintenance Phase : This included 6 months follow up visits to assess the oral and prosthetic hygiene, monitor periodontal condition of teeth and condition of peri-implant soft tissue.

DISCUSSION

Implant therapy in the anterior maxilla is a challenge for clinicians because of patient's esthetic expectation and difficult pre-existing anatomy (Buser *et al*, 2004); therefore, a comprehensive pre-operative planning is required. Knowledge and skills were gained that to successfully meet the challenges of esthetic implant dentistry; a team approach is advantageous and highly recommended. The team includes an implant surgeon, a restorative clinician, and a dental technician.

The treatment plan was discussed with the patient and the risks associated with the dental implants placement were carefully explained. The aims of the treatment were successfully achieved and the patient was extremely pleased with the final outcome. A systematic maintenance program was arranged to ensure a long term success of the restorations. Regular and continuous monitoring of peri-implant tissues during maintenance care is recommended for the early diagnosis of peri-implant disease (Salvi and Lang 2004).

CONCLUSION

Placing dental implants and implant supported prosthesis in the critical esthetic zone- maxillary anterior region is a challenging procedure for the dental professional.It requires requires precise planning, surgery, and prosthetic treatment and an integrated interdisciplinary approach. This article has illustrated the steps needed to create ideal aesthetics in the maxillary anterior region.

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