

INTERDISCIPLINARY APPROACH [PERIODONTICS / PROSTHODONTICS]



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Implant Supported All Ceramic Single Crown

Ever since 1982 when Professor Per-Ingvar Branemark gave the concept of Osseointegration, Implant Dentistry has undergone a constant evolution for better.

The impending loss of single tooth in esthetic zone in a patient with otherwise healthy periodontium can be distressing experience. Single tooth implant replacement have been documented with success, traditional guidelines have been suggested that 2 to 3 months of alveolar ridge modeling following the tooth removal and an additional 6 months of load free healing are needed for implant Osseointegration.

Such case is presented here,

A 20 year old male, Manjunath Reported to Department of Periodontics, College Of Dental Sciences, Davangere with chief complaint of missing tooth in upper front tooth region. Patient gave history trauma and tooth loss in same region 1 year back. Patient was systemically healthy. On Examination Patient was diagnosed with missing maxillary right central incisor. Patient was having Angle's Class I malocclusion and adequate inter-arch space.

Presurgical preparation

Selected patient following an initial examination and treatment planning was given detailed instructions in the self controlled plaque control measures and had been subjected to phase I periodontal therapy. Study casts were made using irreversible hydrocolloid impression of both arches and poured in dental stone. They were used to assess: 1) Present occlusion and natural abutment. 2) Inter arch space. 3) Width of edentulous ridge at proposed implant site.

To diagnose the edentulous area IOPA and OPG were taken;

As traditional methods of radiology lack sensitivity for detection of Bone Density and also suffer from disadvantages like magnification and overlapping a more definite method CT scan was done for patient.

Findings of CT scan	Bone Density 950 HU
Available length 13mm	Available width 7mm

Surgical Procedure:

Two stage (Submerged implant placement) was done. Diameter and Length of selected implant (UNITI®) was 3.7mm and 13mm respectively. After adequate anesthesia remote incision is given and full thickness flaps rose to expose desired site of implant. Incisions were extended one tooth on either side to have good reflection without vertical incision. Then small round bur is used to mark implant site. Site is then prepared for depth of 1-2mm breaking through cortical plate. A small twist drill of 2mm diameter and marked to indicate various length is used to establish depth and align the long axis of implant recipient site. It was used at speed of 800-1500 rpm and continuously irrigated. Drills were used intermittently and repetitively pumped or pulled out of osteotomy site while drilling to reduce heat production. Next step was to use drills systematically to widen the size to accommodate selected size of implant. Once implant has been placed, cover screw is secured and flap is closed over implant using 3/8 circle, reverse cutting needle and 3-0 black silk sutures.

In this approach first stage ended by suturing soft tissue over the implant cover screw so that it remain submerged and isolated from oral cavity for 4 months (Thomas et al 2008). In the second stage surgery (exposure surgery) the implant was uncovered and healing abutment was connected to allow emergence of implant abutment through soft tissue. It was followed by prosthetic treatment

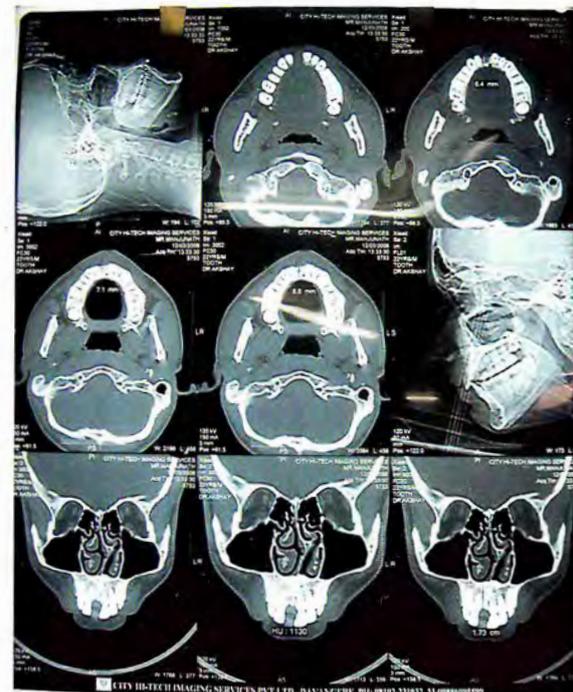


Fig. 1

Post Operative Care:

Patient was given antibiotics (Amoxicillin 500mg tid) for 1 week. Post operatively patient was advised to apply ice-packs for 20 minutes intermittently. Chlorhexidine rinse was prescribed for oral hygiene care. Pain medication (Ibuprofen 200mg bid) was given adequately and patient was instructed to maintain soft diet for first few days after that can shift to normal dietary habits

Exposure Surgery:

Crestal circular incision was given and wedge of tissue was removed to expose the implant.

Implant screw was then removed and standard abutment was placed and patient is recalled after 14 days for prosthesis.



Fig. 2 Preoperative



Fig. 3 Surgical site preparation



Fig. 4 Depth Gauge



Fig. 5 Implant in place



Fig. 6 Sutures Placed



Fig. Periodontal dressing given

Fabrication steps :

1. Implant level impression was made using impression coping with addition silicone impression material.
2. Laboratory analogue attached to the impression coping and poured.
3. From the cast impression coping removed and abutment placed.
4. Sectional impression of anterior region of cast was made to obtain refractory cast.
5. Glass infiltrated coping was fabricated on refractory cast and veneered ceramic fired over that to make final prosthesis and cemented on 21/7/2008. (Fig-1-10)



Fig-1 & Fig-2 Pre Treatment



Fig-3 Final Impression



Fig-4 & Fig-5 Master Cast



Fig-6 & Fig-7 Final Prosthesis



Fig-8 & Fig-9 Post Treatment



Fig-10 Smiling Patient



MALAYSIAN DELEGATION

