“Dental Implants”– Boon to esthetic dentistry

Dr. Ravikumar N1, Dr. Jagadeesh KN1, Dr. Keertiram1 Dr. K. R. Kashinath2

1 Senior Lecturer, 2 Professor & Head, Department of Prosthodontics, Sri Siddhartha Dental College, Tumkur

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Introduction

A dental implant is an artificial tooth root replacement and is used in prosthetic dentistry to support restorations that resemble a tooth or group of teeth.

There are several types of dental implants. The major classifications are divided into osseointegrated implant and the fibrointegrated implant. Earlier implants, such as the subperiosteal implant and the blade implant were usually fibrointegrated.[1], [2]. The most widely accepted and successful implant today is the osseointegrated implant, based on the discovery by Swedish Professor Per-Ingvar Brånemark that titanium can be successfully fused into bone when osteoblasts grow on and into the rough surface of the implanted titanium.[3] This forms a structural and functional connection between the living bone and the implant.

Today, partially edentulous patients represent the majority of patients seeking treatment with implant-supported prostheses. This case report presents the specific aspects of the surgical handling of partially edentulous patient with a single-tooth gap.

Case report:

A 26 year old partially edentulous female patient had reported to the Clinic with the chief complaint of missing maxillary tooth on the right upper side of her mouth. History revealed that the patient had got her tooth extracted 6 months back due to Gross destruction due to caries. On examination of the oral cavity the patient’s oral hygiene was moderate. She had a missing space in relation to 25 (Fig 1).

A decision was made based on patients desire to have 62 implant supported prosthesis. After radiologic examination it was seen that the patient had dense compact bone measuring 13mm in
height. A thorough medical examination was done prior to the surgery to rule out any pathology. The blood reports of the patient also did not show any pathology. Hence it was decided to use hitech (Life care) implant measuring 11.5mm length and 3.75 mm diameter. A diagnostic template with a metal ball was placed to determine the amount of bone available in relation to the sinus floor for the placement of implant. Flap was raised to give a visual confirmation for the placement of the implant with the help of the surgical guide made of self cure clear acrylic on the diagnostic cast (Fig 2).

![Fig.2- Surgical template](image)

Pilot drill was used to place the in the predetermined area (8mm length) with the help of surgical template. Paralleling tool was used to confirm the relative parallelism of the implant in relation to the adjacent teeth (Fig3) and confirmed with Intra oral Periapical radiograph.

![Fig.3- Parrelleling tool in place](image)

Then the drill sequence was used to place a hole to the depth of 10mm in the following sequence (2.5mm, 2.8mm, and 3.2mm). Now the implant was placed and submerged within the flap. A time period of 6 months was given for the Osseointegration process. Second stage surgery was done following confirmation of osseointigration with the help of IOPA and straight healing cap was placed for 2 weeks. Then the healing cap was removed (Fig 5) and impressions made with the help of impression transfer post by using putty light body (closed tray technique).

![Fig.5- After removal of the healing cap](image)

Cast was poured and the abutment fitted to the implant analog and the milling procedure was carried out and a full ceramic crown was fabricated. Abutment was fixed in the patients mouth (Fig 6).

![Fig.6- Milling of abutment](image)

Bisque trial was done for Colour, shape and occlusal interference in the lateral movements with the respective canine guided occlusions and finally the crown cemented(Fig 7) with Glass ionomer luting cement (Fuji I) after Glazing. Extra cement was
removed using interdental essential floss and super floss (Oral B).

![Fig. 7- Final restoration](image)

**Discussion**

For decades dental profession has been advising implants for treating both partially edentulous and completely edentulous patients. The success of osseointegrated implants has been well documented by Leventhal, Branemark et al., Adell et al., Buser et al., Jaffin and Berman and others.

When an appropriate protocol is utilized including sterile technique, gentle surgical drilling and a healing period of 3 to 6 months, a successfully integrated fixture can be expected. However, the literature does not offer any evidence to substantiate the necessity for unloaded healing times before these fixtures may receive occlusal forces. The use of implants to support dentures has been advocated by many authors, with the following advantages: 1. Higher patient acceptance. 2. Preservation of remaining alveolar bone. 3. Improved function.

**Conclusion**

The goal of dentistry is to provide an comprehensive and optimum restoration for a patient from the available treatment options. Implants dentistry has become an elective treatment option in providing such optimum treatment in obtaining the high cosmetic and functional need of the patients. Patients who are partially or fully edentulous may predictably be restored with fixed implant prosthesis immediately upon fixture placement if certain parameters are met.

**References**


