

CASE REPORT

Full Mouth Rehabilitation with Immediate Loading Basal Implants

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ABSTRACT

Rehabilitation of partially and completely edentulous patients with implant supported prosthesis has become a widely accepted treatment option. The conventional Branemark system involves loading of the implants after 4 to 6 months of placement. It has many disadvantages as patient has no teeth or opt for removable temporary prosthesis and hence, many patients, at times, do not choose this option at all. Dental implants, when placed in the basal bone, can be immediately loaded with teeth; as this bone is very strong, never gets resorbed throughout life and forms the stress bearing part of our skeleton. Here, we present a case report of full mouth rehabilitation in which 19 single piece basal implants were inserted and functionally loaded with both maxillary and mandibular cement retained hybrid dentures.

Keywords: Basal implant, Immediate loading, Rehabilitation.

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INTRODUCTION

Rehabilitation of partially and completely edentulous patients with implant supported prosthesis has become a widely accepted treatment option.^{1,2} The conventional Branemark system involves loading of the implants after 4 to 6 months of placement. This obvious disadvantage of the procedure leaves the patient with no teeth or with a removable temporary prosthesis and hence, many patients, at times, do not choose this option at all. Dental implants, when placed in the basal bone, can be immediately loaded with teeth, as this bone is very strong, never gets resorbed throughout life and forms the stress bearing part of our

skeleton.³ Since, the cortical walls around the extraction site are stable at the time of extraction, placement of implants into fresh extraction sockets are more successful than placement after few months.⁴ There are two different approaches for immediate loading of dental implants. First one is on the principle of compression screw corticalization of spongy bone (KOS), whereas the other is on the cortical anchorage of thin screw implants biocortical screw (BCS).⁵

CASE REPORT

A 58-year-old male having normal gait and stature reported to the department of Oro-maxillofacial Prosthodontics, Crown & Bridge and Oral Implantology with the chief complaint of inability to eat properly.

Intraoral examination revealed that the patient had a maxillary 6-unit and mandibular 4-unit porcelain fused to metal bridge. Both the bridges had ceramic chipped off the labial surfaces (Fig. 1). On clinical examination, it was observed that both the bridges were mobile because all the abutments were mobile. The remaining present teeth were also periodontally compromised. There was no significant medical history. Various treatment options included: Removable complete denture after total extraction, a conventional implant supported fixed prosthesis (after augmentation procedures), a conventional implant supported over denture (after augmentation procedures) or a basal implant supported hybrid denture. The patient decided to have his treatment done in minimum time by the least traumatic and fixed option. Thus, we chose



Fig. 1: Preoperative view

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Fig. 2: Basal implants placed in maxillary and mandibular arch

to rehabilitate the patient's mouth with a basal implant supported hybrid denture.

This case report highlights the use of single piece immediate implants (10 BCS, 3 KOC+ and 6 KOC) (Simpladent) in a full mouth rehabilitation patient. A routine blood examination was done for the patient and the results were found to be within normal limits.

Local infiltration (Biocaine 21.3 mg lignocaine, India) was given. No mandibular block was administered to ensure the response of mandibular nerve. The remaining teeth were extracted atraumatically and curettage was done followed by copious irrigation with povidone-iodine. Then, the implants were placed using a flapless immediate procedure Figs 2 and 3.

Maxillary and mandibular impressions were made using addition silicone impression material and tentative jaw relations were recorded using Aluwax. On the 2nd day, after the adjustment of metal framework in the patient's mouth and completion of successful try-in, occlusal rims were made on the framework and definitive intermaxillary records were made. On the 3rd day, all the

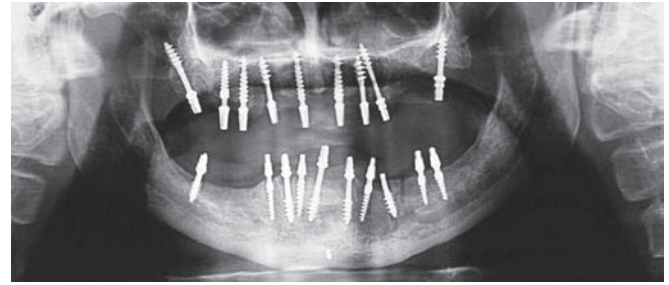


Fig. 3: Orthopantomogram showing basal implants placed in maxillary and mandibular arch

implants were functionally loaded with both maxillary and mandibular cement retained hybrid dentures, providing bilateral balanced occlusion Figs 4 and 5.

DISCUSSION

Immediate loading of basal implants can be done, when they are placed in the dense cortical bone, as they attain high primary stability there. Therefore, they are more predictable than before, though there are high chances of crestal bone loss.⁶ Since, the remodelling of the bone starts within 72 hours and weakens the peri-implant bone structures, rigid splinting of the metal framework should be done as early as possible. The splinting distributes the masticatory forces from the bone around the implants to other cortical areas as well. This procedure and its principles are known in traumatology.⁷

The 9 implants (5 BCS, 1 KOC and 3 KOC+) were placed flaplessly in the maxillary jaw engaging the basal bone, using hand-grip instruments. Out of 5 BCS implants, 3 were placed in the maxillary anterior region engaging the nasal floor, as these were the recently extracted infected sockets and the remaining two were placed bilaterally in the tuberopterygoid region in the maxillary arch. This region provides more stability than anchorage offered by any other part of maxillary region.⁸ The 3 KOC+ implants which were placed in the



Fig. 4: Metal trial



Fig. 5: Postoperative view

maxillary anterior region also engaged the nasal floor, as these were the healed sockets. The 1 KOC implant was placed in the maxillary right posterior region, as there was sufficient bone height and width. The 10 implants (5 BCS, 5 KOC) were placed in the mandibular arches. Since the bone height was not sufficient in the mandibular right posterior region, 1 BCS implant was placed engaging the lingual cortical plate, bypassing the mandibular nerve. The remaining 4 BCS implants were placed in the recently extracted infected sockets. Wherever there was sufficient height and width of bone in the mandibular region, 5 KOC implants were placed. About 100% success rate can be achieved if BCS implants are used along with an appropriate immediate load protocol.⁹ The BCS implants are smooth surface implants which have aggressive threads and can be placed in already infected sockets, whereas KOC implants are surface treated and can be placed only in healed and uninfected sites.¹⁰ We can achieve excellent primary stability along the vertical surfaces of BCS implants with no need for corticalization. Hence, they can be used for both immediate placement and immediate loading. The KOC implants can also be immediately loaded because of their compression screw designs.

CONCLUSION

Most of the edentulous patients requiring implants are elderly, hence, more prone to health risks and thus not fit enough to undergo invasive surgical procedures. Since dental implantology becomes unpredictable and expensive

when bone augmentations are a part of treatment plan, basal implants become patient's first choice.

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