

Immediate Implant Loading: A Case Report

Dilip Dhamankar, Arun R. Gupta, Janani Mahadevan

© Indian Prosthodontic Society

Dental implants have long provided an excellent treatment option to restore edentulous spaces. Successful formation of a direct bone to implant interface is the goal in implant therapy. Immediate loading is an alternative to two stage surgical procedure. Improved surgical instrumentation implants design, and surface topography changes the concept of two stages surgical to one stage surgical procedure.

Keywords: Bicortica-Schraube Roentgen Indikator, Bone graft material

Introduction

The therapeutic goal of implant dentistry is not merely tooth replacement but total oral rehabilitation. Considering dental implants as a treatment option can provide patients with positive long-term results. Implant dentistry has gone through many phases over the years. Modern technology and design allows us to place our dental implants in immediate extraction sites and often load the implants at the time of placement with predictable success. The concept of placing dental implants to support individual tooth is a newer concept with a positive solution to a difficult situation [1].

In 1938, Dr. Alvin Strock was the first clinician to document the success of placing a single Endosseous implant into an extraction site to support a restoration that lasted more than 10 years [2].

Chaushu et al. compared the success rates of immediately loaded implants in fresh extraction and healed extraction site. The survival rate was 100% for implants immediately loaded and placed in healed extraction sites. However, for implants immediately loaded in implants placed in fresh extraction sites, the success rate was 82.4%.

Case report

A 22-year-old male young patient named Mr. Anand Khanwalkar was reported in the clinic. His right maxillary lateral incisor, which had already undergone root canal treatment and had a crown, was fractured in a road accident and he wanted to replace it (Fig. 1). Option of three unit bridge and implant were presented to him. As an aspiring actor he preferred an implant to leave adjacent teeth untouched.

Armamentarium

Disposable needle and syringe, local anesthesia, extraction forceps, moon's probe (Fig. 2), implant kit (Fig. 3), implant (Fig. 4), bone graft material (Fig. 5), tooth colored self-cure acrylic resin, trimmer, polishing kit.

Material and Method

First bone density was evaluated preoperatively with orthopentogram (OPG). According to Lekholm and Zarb classification this is a type I dense bone.

Patient was comfortably seated on the dental chair and infraorbital block was given. After that root piece of lateral incisor was removed and gauze piece was placed in patient's mouth to control bleeding.

Before extraction, length of the implant was measured on OPG, length from the cortical bone just below the nasal

D. Dhamankar¹ • A. R. Gupta² ✉ • J. Mahadevan³

¹Department of Prosthodontics, Yogita Dental college, KHED

²Department of Prosthodontics, Vyas Dental college, Jodhpur, Rajasthan

³Department of Prosthodontics, MGM Dental college, Mumbai

e-mail: arunguptarsnr@yahoo.com



Fig. 1 Pre operative view



Fig. 2 Extraction forceps

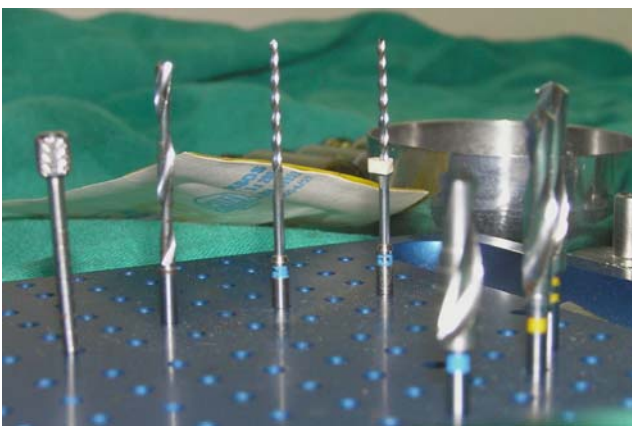


Fig. 3 Implant kit

cavity to incisal level of lateral incisor was measured. After extraction again length measured clinically, clinical length was 2–3 mm less than that, measured on the OPG. After that canal was prepared with pilot drill.

Bicortica-Schraube Roentgen Indikator was used for selecting the width and length of the implant. Bicortica-



Fig. 4 Implant



Fig. 5 Bone graft material

Schraube Roentgen Indikator was placed over the OPG and length and width of the implant was selected.

After preparation of the canal, implant was placed with the help of Ratchet (Fig. 6). Then bone graft was packed around the implant.

After implant placement we saw the implant in OPG (Fig. 7).

After implant placement tooth colored self-cure acrylic resin temporary prosthesis was given. Self-cure acrylic resin was mixed and in dough stage adapted on to the implant, excess acrylic was trimmed. After polishing temporary prosthesis was fitted onto the implant (Fig. 8).



Fig. 6 Implant placement



Fig. 7 Implant shown in OPG

Discussion

Successful formation of a direct bone-to-implant interface is the goal in implant therapy. The two stage surgical protocol established by Branemark and Adell et al. consisted of a healing phase of 3 months in the mandible and 6 months in the maxilla to allow for the formation of mineralized tissue at the interface of dental implant before functional restoration.

Because of improved surgical instrumentation, implant design and surface topography, this concept has been changed.

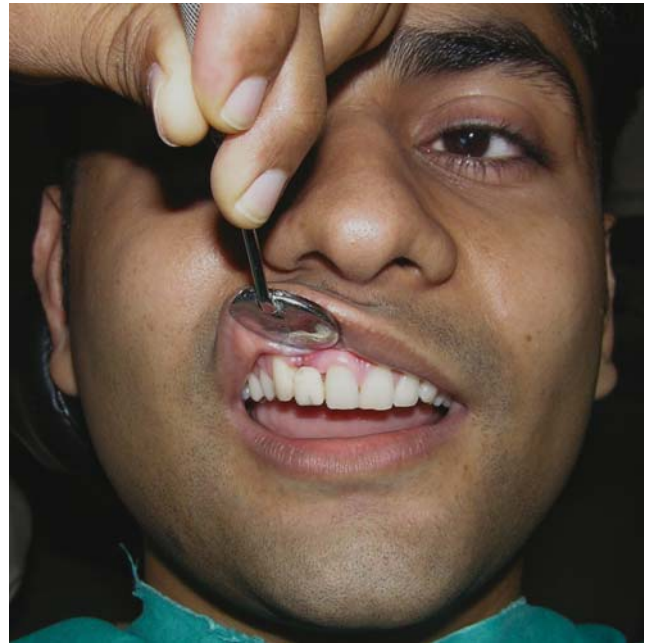


Fig. 8 Immediately after temporary placement

Human clinical and animal experimental studies have shown that implants that are immediately loaded develop bone at the implant interface and are able to tolerate occlusal forces.

Conclusion

Immediate loading is an alternative to two stage surgical procedure. Improved surgical instrumentation implants design, and surface topography changes the concept of two stages surgical to one stage surgical procedure. This procedure also gives patient more esthetic satisfaction; because in this technique there is no phase of edentulous mouth, after implant placement immediately restoration is done.

Prudent implant design selection allows you to meet the demands (esthetics) of the patient.

References

1. Kosinski TF, Skowronski R Jr (2002) Immediate implant loading: a case report. *J Oral Implantol* 28(2):87–91
2. Cameron YS Lee (2006) Immediate load protocol for anterior maxilla with cortical bone from mandibular Ramus. *Implant Dentistry* 15(2):153–158