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Immediate Provitionalization of Full Arch Implant Placement: A Case Report.

Vijay Ebenezer[1]*, R Balakrishnan[2], Pradeep Christopher[1], and Muthu Mani[1].

[1]Department of Oral and Maxillofacial Surgery, Sree Balaji Dental College & Hospital, Bharath University, Pallikaranai, Chennai, 600100
[2]Department of Oral and Maxillofacial Surgery, Thaimoogambigai Dental College & Hospital, Mogappair (west) Anna Nagar, Chennai, 600017

ABSTRACT

An immediate implant placement and provisionalization approach has been increasingly adopted by clinicians because the technique seems to predictably improve esthetic outcomes. This approach offers the advantages of decreased treatment time and morbidity, while exhibiting success rates similar to those of the traditional approach. In this case report immediate implants were placed with immediate provisionalization.
Keywords: implant, esthetic, provitional restoration, mandible.

Corresponding author

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INTRODUCTION

Restoration of missing teeth in the esthetic zone is a great challenge for dental practitioners. Implant-supported fixed prostheses are usually attempted before other options such as conventional bridges or removable dentures to avoid damage to adjacent teeth and provide better chewing function.

The immediate replacement of teeth with implants is no longer considered an experimental technique. The literature bears witness to numerous reports and clinical studies demonstrating that this technique has been mastered in cases where its indications are properly assessed and its execution is perfectly accomplished. Advantages of this technique include preservation of tissue and optimization of the soft tissue contour, simplification of treatment and reduction of sequences, improved psychological advantages, enhanced patient comfort and aesthetics.

The remarkable success rates reported by longitudinal studies [1-4] involving one-stage implants (i.e., implantation accomplished via one surgical procedure) have eliminated one of the basic tenets of the original Brånemark technique: the covering of the implants, supposedly protecting them against early loads liable to ruin their osseo integration. Clinical studies [5, 6] have demonstrated that these same one-stage implants, when situated in the symphyseal sectors and covered by complete rebased dentures (i.e., exerting pressures), had success rates comparable to those of two-stage implants. It has been recognized that immediate implant loading when properly implemented in bone of good quality and sufficient implant stability was achieved, did not compromise osseointegration.

A vivid understanding of the biological and mechanical principles underlying the immediate-loading concept is necessary for achieving clinical success. Immediately loaded dental implants must achieve adequate primary stability [7-10] and should be rigidly splinted around the curvature of the arch. The provisional prosthesis should be undisturbed for a minimum of 2 months during the post-placement healing period.

CASE PRESENTATION

A 55 years old woman was complaining of pain and excessive tooth mobility in her lower teeth. She was not willing for complete dentures. She was willing to have fixed implant –supported restorations. On clinical examination, it was advanced generalized peridontities along with grade 2 and grade 3 mobility on her lower arch teeth. Radiographic feature showed moderate bone loss (fig 1).

Figure 1: Pre-operative OPG.

In the mandible the bone volume was adequate for implant placement immediately after extraction followed by fixed provisional restoration was planned.

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Since immediate implant placement and provisionalization was recommended only in intact sockets, it essential that alveolar bone and gingiva be preserved with an atraumatic extraction technique. Instruments such as periotomes, small elevators, and root forceps were used to avoid damage to the labial plate. Following extraction, the site was thoroughly inspected to verify the integrity of the osseous crest. Implant of 13mm length was selected for placement with 3.75 diameter. After the placement of implant, abutments were placed. All abutment screws were torque to 20 Ncm with a torque-indicating device. Impressions were made for fabrication of acrylic dentures for lower arch. Patient's vertical dimention at centric relation was taken from her pre operative cast and in dental laboratory the same vertical dimension was maintained and denture was fabricated.

The patient left the dental office with fixed mandible implant retained provisional prosthesis in place. The mandibular prosthesis was supported by four implants; each implant insertional torque was 45Ncm for primary stability. The vertical dimention of occlusion of the patient was not disturbed and it was the original (Fig 2). Patient was review after 10days for first postoperative care.

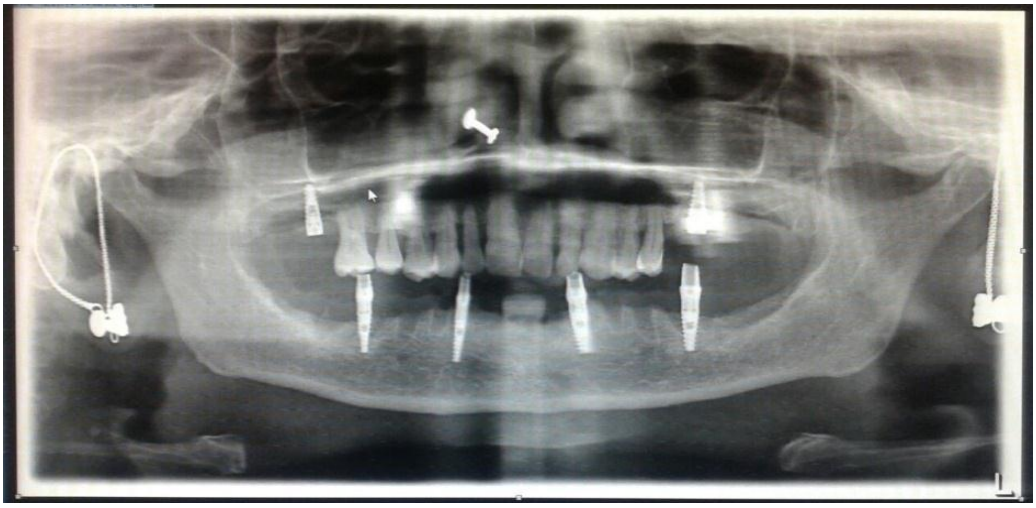

Figure 2: Post operative OPG.

DISCUSSION

Immediate implant placement, in which the clinician places the implant immediately following extraction, can be chosen if the periodontium is intact. This approach offers the advantages of decreased treatment time and morbidity, while exhibiting success rates similar to those of the traditional approach [11]. Additionally, it also offers the option of immediate provisionalization and enhanced esthetic outcomes.

An immediate implant placement and provisionalization approach has been increasingly adopted by clinicians because the technique seems to predictably improve esthetic outcomes. Favorable results were originally reported over a decade ago [12, 13]. However, subsequent publications reported recession and loss of labial crest height [14]. Although buccal implant placement was the main cause of recession in many instances, biotype and factors affecting crestal bone maintenance may also play a role. A more recent animal study demonstrated that the labial plate is maintained when implants are placed in a lingual position [15].

Immediate placement and provisionalization requires the choice of an implant that will provide adequate primary stability and crestal bone maintenance.

Tapered implants facilitate the achievement of high insertion torque, which may serve as an indicator of implant stability [16]. A minimum insertion torque of 45 Ncm is required for immediate placement and provisionalization of single-tooth implants [12, 13]. The use of an adequately contoured immediate provisional restoration is essential in preserving the peri-implant soft-tissue.

The main objectives of the immediate provisional are to satisfy the patient's esthetic needs and provide support for the peri-implant soft tissues. The contours of the provisional be adequately designed so that the position of the gingival margin is preserved [17]. The immediate provisional must be designed avoiding occlusal contact.

CONCLUSION

Same-day implant placement and provisionalization should be a treatment option and may ultimately become the preferred treatment option for patients requiring implant rehabilitation.

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