

Immediate implant placement: an overview

Editorial

During the 70 years when the osseointegration was introduced, the oral implants were used predominantly on the edentulous patient rehabilitation and the aim was the stomatognathic system function devolution thus contributing positively to restore the patient's psychosocial. During those years the predictable and long term results evidences make extensive this practice to the partial edentulous patients.¹

It was noticed that the treatment of partial edentulous patient was more complex requiring a harmonic relationship between the implant prosthesis and the remaining natural teeth mainly in anterior regions.

The implant restoration with an acceptable outcome depends on the correct tri dimensional implant placement as well all the tissue architecture that surrounds the implant. In order to succeed in a peri-implant aesthetic with single unit implants is a challenge² as well the maintenance.

Despite the high osseointegration success rates,³ the focus nowadays is to look what the patient lost in the edentulous site. In order to achieve natural aesthetics a bone improvement or grafting soft tissue is needed and sometimes a combination therapy is necessary to put an implant in an ideal tri-dimensional position and as a result a quality of survival of the implant is conquer.

Since a good foundation is necessary several reports tried to classify the bone defect to make easy the decision for a better treatment option. In 2007, Elian et al.⁴ proposed a classification system for extraction sockets where they evaluated the soft tissue and buccal bone pos-extraction.

Type I Socket: Easiest and predictable. The soft tissue and the buccal bone are at the normal level and remain after the extraction.

Type II Socket: Are often difficult to diagnose and sometimes are treated as a type I by the inexperienced clinician. Facial soft tissue is present but the buccal plate part is missed after the extraction.

Type III Socket: Very difficult to treat and requires bone augmentation and CT grafts. The soft tissue and the buccal plate are both markedly reduced after tooth extraction.⁴

Funato et al.⁵ described in their article the importance of the timing or the "forth dimension" relative to extraction and implant placement. The timing of tooth extraction and implant placement was classified as follow: Class I: Immediate – extraction, immediate implant placement flapless or with a flap and osseous augmentation with GBR and ct graft.

Class II: Early implant placement (6-8 weeks) – GBR can be performed at the moment of the extraction or when the implant will be placed.

Class III: Delayed Implant placement- 4 to 6 months after the extraction with the preservation of the alveolar ridge with GBR as well soft tissue augmentation.⁵

Jovanovic^{6,7} proposed in his paper a more complete classification and decision maker about the timing:

Kan et al.⁸ described on their paper different scenarios of facial osseous defect. The osseous defect was categorized into V, U or ultra-U

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(UU) shape. A periodontal probe at the midfacial (F), the mesial (MT) and the distal (DT) of the failing tooth and the mesial (MAT) and distal (DAT) aspect of the immediately adjacent teeth. A V shaped osseous defect was considered when it is only affects the F portion of the facial bone plate, an U-shaped osseous defect extended to the MT and DT area and UU-shaped extends into the MAT and DAT area. All the sites received a bone and CT grafts. The results showed after one year that 8.3% V-shaped, 42.8% U-shaped and 100% of UU-shaped defects resulted in greater than 1.5mm of facial gingival recession.⁸

Both the horizontal and the vertical bone augmentation is well documented in the literature with a predictable results.^{6,9-13} During the workshop on Contemporary Science in Clinical Periodontics, in 2003, a high level of predictability was indicated to the survival of implants in augmented ridge, similar to implants placed in native bone (Annals of Periodontology 2003).

According with Jovanovic,¹⁴ there are 5 keys that lead us to a quality implant survivor:

- 1) Bone preservation / regeneration
- 2) Implant surface / design /position
- 3) Soft tissue thickness support
- 4) Prosthetic tissue support
- 5) Restorative emergence and material

In the 80's the implant placement was a functional driven therapy, during the 90's it was understood the importance of the final prosthesis and it was a prosthetic driven therapy. During the 2000 years, more than 20 years of implant therapy, several studies showed us the importance of a biological driven therapy. As these studies demonstrated that there are specific indications to do an immediate implant placement otherwise the outcome will be compromised. To achieve the optimal aesthetic and functional results, the clinicians must analyze what is lost in the implant site and be prepared to rebuild it.

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Conflict of interest

The author declares that there is no conflict of interest.

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