

Immediate Implant and Immediate Loading in Anterior Region - Follow Up of 5 Years - Case Report

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ABSTRACT - The use of osseointegrated implants developed by Dr. Per-Ingvar Branemark is consecrated and well accepted on the part of the patients and professional, however the original protocol with two surgical stages demand a great amount of time and costs, besides the patients indisposition to have to wait at least three months for the placement of the prosthesis. To minimize those problems new studies were done, including the protocol of immediate load and the Branemark Novum system. Then, decreasing time of treatment and consequently costs, giving to the patient the opportunity of, soon after the surgery, to install a temporary prosthesis or definitive in Branemark protocol cases. This study demonstrates a clinical case where was accomplished the procedure of immediate implant and application of immediate load in superior central incisor.

KEYWORDS - Dental implantation, osseointegration, titanium.

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Introduction

There are lots of patients that still refuse to submit themselves to osseointegrated implants. This can be because they need to use a temporary removable prosthesis or the one that has to be supported by the adjoining teeth during the osseointegration healing period, despite this kind of procedure has shown itself successful. As a result, several providences were taken in order to reduce the healing period. Immediate loading may be defined as the placement of a prosthetic component on a surgical placed implant, even if the osseointegration has not occurred yet, which makes the traditional period unnecessary (1). A 1-stage protocol includes immediate loading of dental implants, and the implant can be used

for making the prosthesis immediately after its placement (2).

Several studies have proved that immediate loading can be as successful as the 2-stage surgery procedure (3), what can make this new protocol become a possible treatment alternative. Nevertheless, some criteria need to be followed to obtain more predictable results. The bony tissue quality, a careful placement and the prosthesis adaptation are factors that directly interfere in the success of immediate loading treatments (4).

The use of immediate load is possible once some circumstances and favorable conditions are respected, taking into account the general condition of the patient and the basic requisites to place the load (5).

The aim of this study is to present a clinical report that describes the immediate loading implant procedure.

Case Report

The case reported was performed in a private clinic, in a 27 year-old male patient, who presented the medium “smile line” with esthetics complaints and also a lack of retention of the crown in the element 21 (Figures 1 and 2). After clinic and radiographic exams, the presence of a fracture in the vestibular face of the root of the tooth 11 was detected. In addition, it was proposed the root extraction, the immediate implant installation and the immediate placement of a temporary prosthesis. The remaining tooth was atraumatic extracted by the aid of a periotome, preserving not only the site walls but also the soft tissue (Figure 3). After the extraction, the site was curetted and irrigated with physiological solution and rifocin. An instrumentation was performed in the surgical socket with a

series of drills in order to place a 5 x 13mm implant, Alvim II Neodent® (Curitiba, Paraná, Brazil) (50N/cm torque wrench) (Figure 4). Care was taken in order to leave a small gap (1mm) between the implant and the vestibular bony table. After fixing the implant, a temporary component was placed (Figure 5) in order to build a temporary crown with the stored tooth (Figures 6 and 7). After the osseointegration period, the temporary restoration was removed and an impression was built copying the gingival shape (Figure 8) according to the restoration made. In order to build the final restoration (Figure 9), the use of a preparable component of individual titanium was chosen respecting the gingival architecture shape obtained by the temporary restoration. A ceramometal crown was cemented after a 32N/cm torque wrench and the screw head was protected with cotton and gutta-percha. After 5 years, it can be observed not only the total maintenance of the gingival architecture but also the bony tissue stability around the implant (Figures 10 and 11).

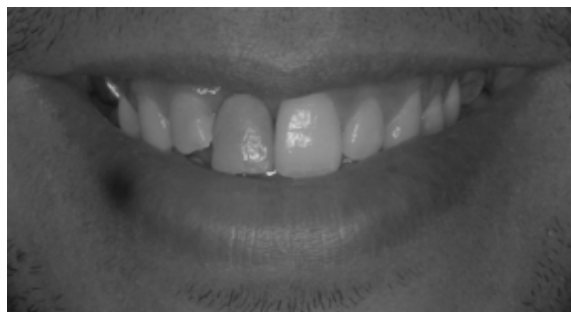


Figure 1. Prosthetic crown with lack of retention

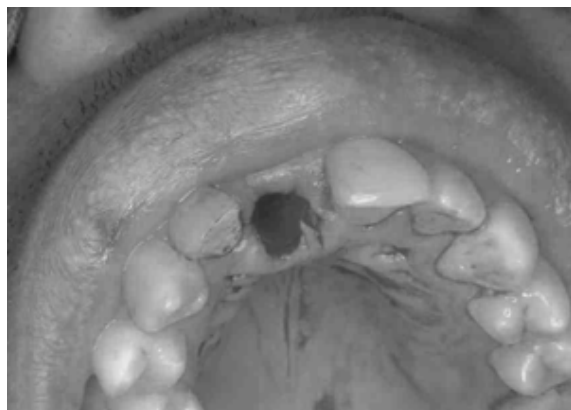


Figure 3. Site after the extraction

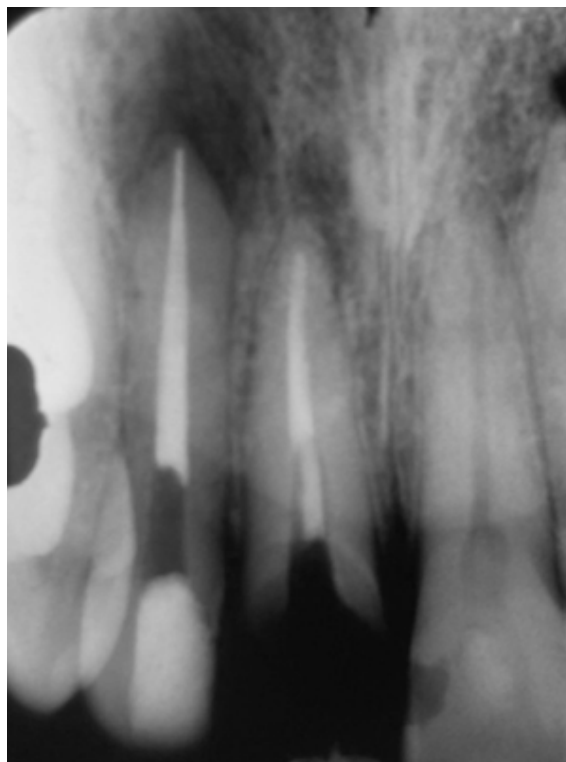


Figure 2. Initial Rx

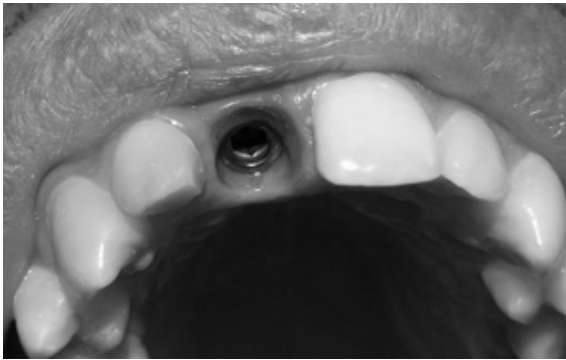


Figure 8. Gingival shape



Figure 10. Follow up of 5 years



Figure 4. Implant fixed

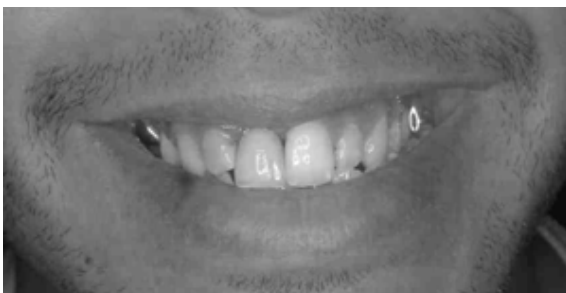


Figure 7. Smile immediately after surgery



Figure 9. Ended case

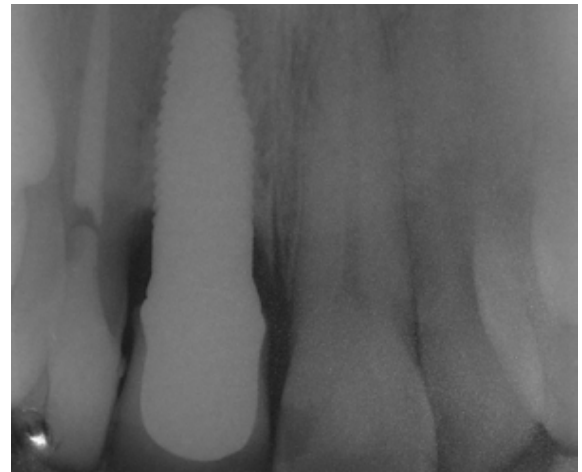


Figure 11. Follow up Rx



Figure 5. Temporary component



Figure 6. Temporary crown

Discussion

The original 2-stage surgery protocol to place osseointegrated implants (6) has been largely applied in clinical practice and it has shown itself a successful procedure (7). In this kind of protocol, a 3-to-6 month waiting period after implantation is needed for the osseointegration process realization.

The use of 1-stage surgery and immediate loading of dental implants have been largely discussed in odontologic literature (1-10), showing that this procedure can be as successful as the 2-stage surgery procedure (5,8,11).

A constant concern in dental offices is about the rehabilitation with implants made in the anterior region, giving back to the patient not only his immediate functions but also his esthetics aspect. In order to achieve an esthetics improvement of dental implants restorations it is necessary some care concerned to the height of the implant's position and its relation with the adjacent teeth, in order to have a good gingival contour, to preserve the interdental papillae and to have the appropriate emergency profile. A viable alternative when teeth have to be extracted and they do not present fistulae and infections, and after implant placement, is the immediate loading, preserving the remaining bony and gingival tissues (8,10).

There are some prerequisites that need to be achieved in order to perform an immediate loading, such as: the absence of fistulae, infections, and periodontal pockets; the presence of an ideal gingival architecture, tooth's atraumatic extraction, and complete bony growth. When these prerequisites are present, immediate loading can be safely used, preserving not only the shape but also the bony and gingival volume, improving the prognostic of restorations about implants (11,12). In the case reported, a long implant was used, and it propitiated an excellent initial stability, what is an essential requisite to perform immediate loading implants (2,9). The surgical technique was performed with no incision preserving the gingival anatomy of the patient and allowing the healing with no scar. After the exodontia, the presence of a vestibular bony table could

be observed. In addition, a 16mm implant with intern hexagon was placed (8). The temporary restoration was deprived of eccentric movements in order to minimize the implant's micromovements. After the osseointegration period, the temporary restoration was removed and an impression was built copying the papilla shape developed by the temporary restoration to make the final individual prosthetics component and on this component the ceramometal crown was cemented.

Conclusion

Within the limits of this study, it can be inferred that the success of osseointegration in immediate loading implants depends on several factors that have to be taken into account before the surgery. In addition, when it is indicated, it is a safe procedure that immediately provides functional advantages, improves esthetics and patient self-image, and reduces the discomfort of the waiting period present in the traditional 2-stage surgery technique.

Resumo

SILVA, Frederico Goulart de Oliveira, RAMOS-NETO, Antonio da Silva, COSTA, André Lins Cavalcanti Corrêa da, NEVES, Daniel Marques das, SIMÃO, Guilherme Morum de Lima, TEIXEIRA, Marcelo Lucchesi, MIRANDA, Milton Edson. Implante Imediato e Carga Imediata na Região Anterior – Proservação de 5 Anos – Relato de Caso. Oral Sci., Jan/Apr. 2010, vol.2, no.1, p. 49-53.

O uso de implantes osseointegrados desenvolvidos pelo Dr. Per-Ingvar Branemark é consagrado e bem aceito por parte dos pacientes e profissionais, porém o protocolo original com dois estágios cirúrgicos demanda uma grande quantidade de tempo e custos, além do incômodo dos pacientes terem que esperar pelo menos três meses para a colocação da prótese. Para minimizar esses problemas novos estudos foram feitos, incluindo o protocolo de carga imediata e o sistema Branemark Novum. Com isso, diminui-se o tempo de tratamento e conseqüentemente os custos, dando ao paciente a oportunidade

de, logo após a cirurgia, instalar uma prótese provisória ou definitiva nos casos de próteses do tipo protocolo. Este trabalho demonstra um caso clínico onde foi realizado o procedimento de implante imediato e aplicação de carga imediata em incisivo central superior.

Palavras-chave - Implante dentário, osseointegração, titânio.

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