RELIABILITY OF THE EXTRACTION METHOD WITH IMMEDIATE IMPLANT

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Abstract: Implantology is an evolving discipline. Extraction with immediate implant helps to reduce the manipulation of the soft tissue and the limitation of bone resorption. It is known that the first 6 months after extraction, a loss of 40% to 60% of the height and thickness of the socket is to be noticed. The functional stimulus exercised on the natural tooth stimulates and supports the alveolar bone. In case of teeth loss, this physiological stimulus disappears in the advantage of a bone resorption, initially transversely and then axially that progresses quickly. In order to prevent this phenomenon, it seems legitimate that an intervention as early as possible will preserve the alveolar cortex. Immediate implant extraction has the following objectives: preservation of the initial bone volume; preservation of the adjacent soft tissue; non-invasive surgery, and if possible without flap; rendering the immediate and rapid function; aesthetic benefit. This technique can reduce the treatment time and the number of surgical interventions, compared with the conventional protocol. In addition, the surgical protocol is less traumatic and is simplified because after extraction, only the calibration of the apical area remains to be done.

Cuvinte cheie: extracție, implantare imediată

Rezumat: Implantologia este o disciplină în continuă evoluție. Extracția cu implantare imediată permite să se reducă manipulările asupra țesuturilor moi și limitarea rezorbției osoase. Este cunoscut faptul că în primele 6 luni după extracție se remarcă o pierdere de 40% a înalțimii și 60% a grosimii alveolei. Stimulul funcțional exercitat pe dintele natural stimulează și susține osul alveolar. În cazul pierderii dinților acest stimul fiziologic dispare în profitul unei rezorbții osoase inițial în sens transversal apoi în sens axial și care progresează rapid. Pentru a preîntampina acest fenomen se adeverește a fi legitimă intervenția cât mai timpurie pentru a conserva corticala alveolară. Extracția cu implantare imediată are următoarele obiective: prezervarea volumului osos inițial; prezervarea țesutului moale adiacent; chirurgia non-invazivă și dacă se poate fără lambou; redarea unei funcții rapide și immediate; câștig estetic. Această tehnică permite reducerea timpului de tratament și a numărului intervențiilor chirurgicale comparativ cu protocolul convențional. În plus protocolul operator este mai puțin traumatizant și simplificat deoarece după extracție nu rămâne decât calibrarea zonei apicale.

INTRODUCTION

The classical method of implantation has already been analyzed and documented, this containing at least three phases:

- surgical stage: implant insertion;healing stage of three up to six months;
- prosthetic stage.

Therefore, between the period of implementation and the prosthetic one, after the classical method, there is a period of three months up to one year, depending on the indications, bone structure and technique chosen.

Logically, there is the question whether we can shorten this period of time and in what manner.

Many doctors practice for many years the postextraction immediate implant technique. This particular method gives very good results equivalent to those obtained by the classical technique, provided that the indications and surgical protocol are observed.

A certain number of rules must be obeyed within the protocol of a post-extraction immediate implant in order to obtain a positive result.

After having done the local anaesthesia, I proceeded to tooth extraction. It should be atraumatic in order to preserve the

bone capital. The post – extractional site should be cleaned in order to remove any possible pathological tissue. Curettage stimulates the socket walls, releasing the bone cells responsible for healing.

Alveolar wall integrity must be verified because the lack of a wall and especially of a vestibular wall is a source of failure.

The next step is analyzing and determining the position and orientation of the implant in relation to the tooth root removed in order to obtain an optimal result from aesthetically and biomechanically point of view. The implant axis is not always compatible with the root axis. The implant position is dictated by functional and aesthetic imperatives. It is very important to achieve good primary stability (minimum 15Ncm) of the implant, thus justifying the interest to drill beyond the anatomical apex, there where this is possible. In some cases, it is necessary to use bone addition materials, as well as membranes because the implant diameter is inferior to that of the diameter of the tooth extracted.

CASE PRESENTATION

In order to present this method of therapy, of the

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studied cases, I chose to present a case that illustrates the benefits of the immediate implant extraction method.

The patient is 52 years old, in good health condition with no counter-indication for the implant treatment.

Figure no. 1. Initial orthopantomography



The orthopantomographic analysis shows that in the left maxillary, respectively at the level of 26 and 27 teeth, there is a bone resorption in addition to an infectious process at the level of the first molar mesial root that is at the level of 26.

Scanner examination allowed analyzing the socket anatomy, alveolar bone thickness, the amount of bone apical, total height available, giving thus the possibility to choose the implant size.

This exam is mandatory for all interventions that are made near the lower dental nerve or maxillary sinus. In addition, the scanner is essential in all cases, where the panoramic radiography leaves unclear the anatomy of the areas where the implant will be placed, in particular regarding the available bone width.

Figure no. 2. Scanner section allowing the analysis of the areas meant for implantation



I proceeded to the extraction of 26 and 27 after cutting the existing prosthetic work. The sectioning was performed in the area of the canine 23, which is an intermediate bridge as one can observe on the orthopantomography.

I tried to make the extraction as atraumatic as possible, to preserve the integrity of alveolar bone plate. In order to do this, I used periotomes to section the periodontal ligament fibbers. I favoured the mesio-distal dislocations to the vestibular-lingual ones, not to damage the cortical bone.

After extraction, I prepared the socket. Socket curettage aimed at removing the pathological process observed on the orthopantomography at the level of the mesial root of the tooth 26. Afterwards, I started the alveoli lavage with saline.

I then proceeded to prepare the implant site by drilling successively according to the analysis made on the scanner. I introduced Wital implants - in the area of 26, I made an implant with the diameter of 4.3 mm and in the area of the tooth 27, an implant with the diameter of 4 mm. Implants were inserted in areas 24 and 25 where an older edentulous existed.

I obtained a superior primary stability of 30Ncm,

AMT, v. II, no. 1, 2012, p. 249

which allowed me to resort to putting the immediate provisional prosthesis.

In order to achieve the provisional prosthesis, provisional prosthetic abutments were installed. I took the imprint that was sent to the laboratory. 24 hours later, I fixed this prosthesis.

Figure no. 3. Orthopantomography observing the implants inserted in the positions 24, 25, 26 and 27



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Figure no. 4. Provisional prosthetic work



Within 24 hours, the patient was solved aesthetically, functionally and prosthetically.

After a period of three months, the provisional prosthesis was removed. Final abutments were installed. The diameter of the abutments was of 3.5 mm in order to limit the vertical and horizontal bone lysis that occurs around the implant. This is the concept of "platform-switching" which consists in connecting an implant with a given diameter to an abutment of a reduced diameter. This procedure seems to prevent the vertical and horizontal bone lysis observed in normal conditions.

After installing the titanium abutments, I started to make the imprint, according to which the final ceramic work was made.

Figure no. 5. Prosthetic abutments made of titanium



Figure no. 6. The patient with her final prosthetic work



Figure no. 6. Orthopantomography emphasising the implants and the final prosthetic work



CONCLUSIONS

The extraction with immediate implant has many advantages which allow especially the optimization of implant healing, the decrease of the number of interventions and of treatment duration.

This method seems to result in a more rapid bone healing which might explain the vascularisation of the bone site caused by extraction and the minimal heating caused by drilling.

The aesthetic result is very good in most of the cases because the implant is situated in the origin position of the natural tooth.

If there is an indication, the simplicity of this method allows foreseeing this eventuality before any extraction indications in the everyday practice. The advantages of the method and the results obtained plead for this.

At the same time, this technique should be used after a detailed clinical examination and by observing a strict protocol, which if not obeyed, it may lead to a failure of osseointergation or aesthetic integration.

BIBLIOGRAPHY

- Elian N, Cho S. A simplified socket classification and repair technique. Pract Proced Aesthet Dent. 2007;19(2):99-104.
- 2. Lazzara RJ. Immediate implant placement into extraction sites. Surgical and restorative advantages.
- 3. Misch C. Contemporary Implant Dentistry, ed2, St Louis, Mosby; 1997.
- 4. Penarrocha M, Uribe R, Balagner J. Immediate implants after extraction .A review of the current situation. Med Oral. 2004;9:234-42.
- 5. Sirbu I. Curs practice de implantologie orala. Bucuresti; 2004.
- Del fabbro M, Testori L, Taschieri S, Weinstein LR. Systematic review of survival rates for immediately loaded implants. Int J Periodontics Restorative Dent. 2006;26:249-263.

- 7. Linkow LL. Chercheve R. Theories and Techniques of Oral Implantology, Vol 1St. Louis: CV Mosby Company. 1970.
- Manatopoulos C, Pilar RM, Smith D. Threaded Versus Porous Surfaced Design For Implant Stabilisation in Bone – Endodontic Implant Model. J Biomed Master Res. 1986:1309-1333.
- O'Sullivan D, Sennerby L, Jagger D, Meredith N. A Comparison of Two Methods of Enhancing Implant Primary Stability. Clin Implant Dent Relat Res. 2004:48-57.