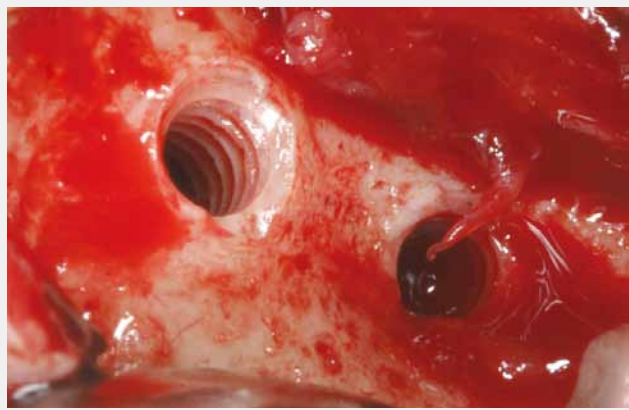


Atraumatic implant extraction: A NEW CONCEPT IN THE REVERSIBILITY OF OSSEOINTEGRATION.

BTI research and development team.

OBJECTIVE:

This study assesses the new implant extraction kit with which it is possible to atraumatically extract all kinds of dental implants, preserving the bone bed in perfect conditions of volume and viability, and if appropriate facilitating the immediate insertion of a new implant.



INTRODUCTION:

The conventional implant extraction technique is based on making a bone trephination around the implant to be removed, obtaining a bone cylinder which encompasses the implant, which leaves a large circumferential bone defect. This made it impossible to fit an implant into the socket up until the healing of the bone at that level and in the event that there were adjacent teeth, the outcome of the procedure could be disastrous. With this new atraumatic extraction system (counter threaded) the bone bed in which the implant was embedded is left intact, allowing another to be inserted within the same surgical procedure.

MATERIAL AND METHODS:

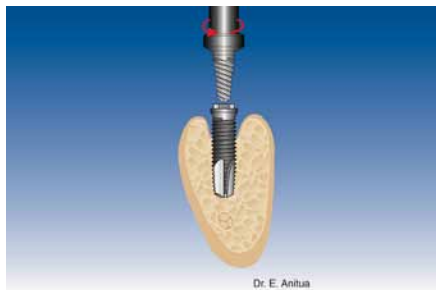
The implant extraction kit is comprised of five extractors with different diameters and lengths that can also be modified in order to properly adapt to any kind of implant and connection. These extractors are fitted to the inside thread of the implant by means of a manual embedding wrench used counter clockwise. Once these are positioned torque is applied in the same direction using a torque wrench and an extender adapted to the required height. The torque wrench disengages when it reaches a counter torque force of 200 N.cm, as this force should not be exceeded in order to prevent micro bone fractures or the breakage of the extraction tool.

In cases where a greater de-insertion force may be required to remove the implant, it is recommended to mill 1 - 1.5 mm of bone away from around the implant using a trephine in order to break down the bone bridges which give it stability and then try once again with the wrench.



SEE A VIDEO
OF THE IMPLANT
EXTRACTION TECHNIQUE

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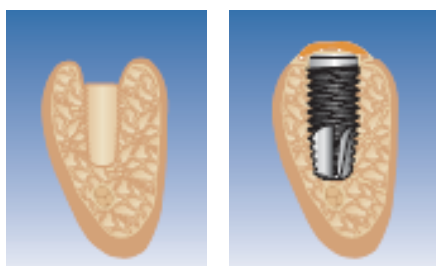
STEP 1

Insertion of the extractor counter clockwise into the implant.



STEP 2

The counter-torque wrench is fitted and it is turned counter clockwise until the osseointegration of the implant breaks. By placing the index finger on the wrench the process is stabilised and twisting forces are avoided.



STEP 3

Extraction of the implant and fitting of a new one in the same bone bed.



STEP 4

In the event that the extraction counter torque exceeds 200 N.cm a new trephine kit must be used only boring down 3 or 4 mm.

RESULTS

A total of 236 consecutive explantations were performed.

The reasons given for the implants were: infection (peri-implantitis), fracture or incorrect positioning of the implant for its prosthetic rehabilitation. 75% of the implants were extracted using a torque of between 50 and 150 N.cm. Only 10% of the implants required additional trephination in order to lower the de-insertion torque. Once trephined, the lowering of the torque was greater than 90% and the extraction proceeded in a most atraumatic manner in 100% of the cases. The following chart shows how it is possible to extract all kinds of dental implants with the new extraction kit.

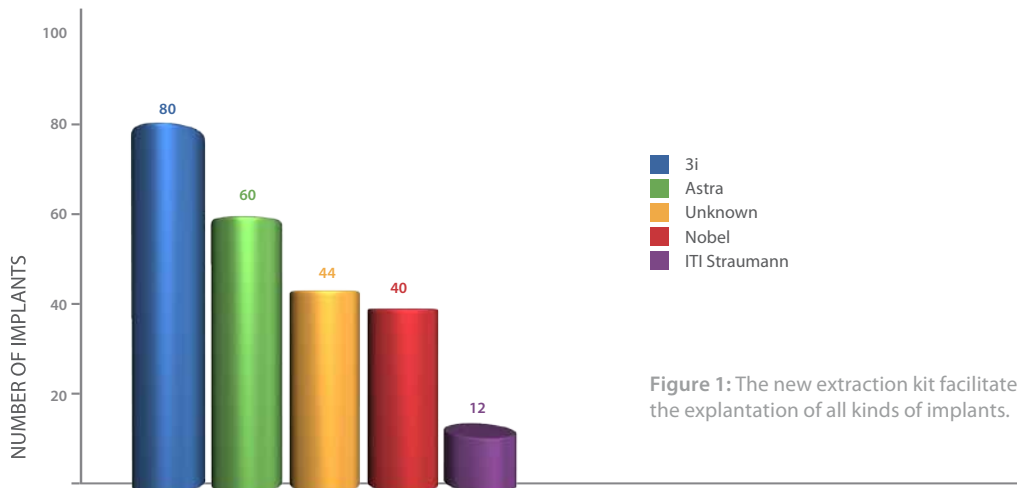


Figure 1: The new extraction kit facilitates the explantation of all kinds of implants.

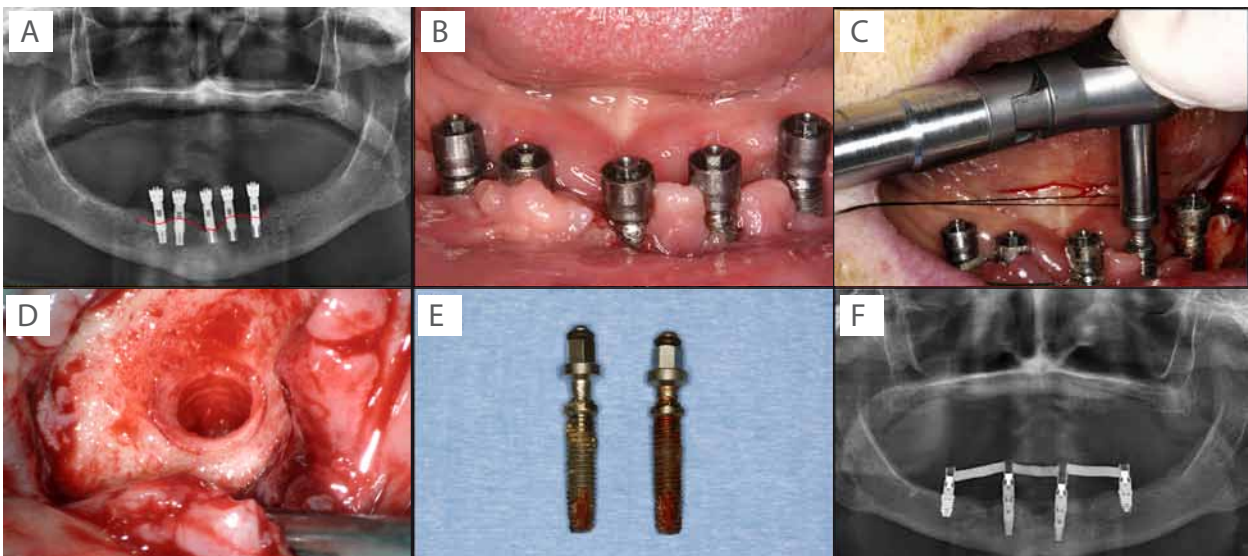


Figure 2: Description of a case included in the study. A) It involves a patient with an implant anchored in the mandible for 15 years. The patient's oral hygiene started to deteriorate considerably over the last 3 years. B) Suppuration around the implants. C) The extraction kit allowed for all the implants to be explanted preserving the alveolar bone. D) Bone bed in perfect condition. E) Image of the extracted implants. F) The case was completed by fitting 4 implants to sustain a screwed in prosthesis.

CONCLUSIONS:

The new extraction kit allows for all kinds of dental implants to be explanted in an atraumatic manner, which is a revolution in the concept of reversibility of osseointegration. The technique is safe, predictable and highly versatile. Moreover, the extraction protocol allows for the immediate fitting of another implant in the same bone bed, avoiding the wait for the regeneration of the bone and significantly shortening treatment times.

BIBLIOGRAPHIC REFERENCES:

1- Berglundh T, Persson L, Klinge B. A systematic review of the incidence of biological and technical complications in implant dentistry reported in prospective longitudinal studies of at least 5 years. *Journal of Clinical Periodontology* 2002;29:527-551.

2- Tonetti M, Schmidt J. Pathogenesis of implant failure. *Periodontology* 2000 1994;4:127-138.

3- Claffey N, Clarke E, Polyzos I, Renvert S. Surgical treatment of peri-implantitis. *Journal of Clinical periodontology* 2008;35 (Suppl.8): 316-332.

4- Anitua E, Orive G. A new approach for atraumatic implant explantation and immediate implant installation. *Oral Surg Oral Med Oral Pathol Oral Radiol.* 2012 Mar;113(3):e19-25.

5- Covani U, Barone A, Cornelini R, Crespi R. Clinical Outcome of implants placed immediately after implant removal. *Journal of Periodontology* 2006;4:722-727.

ACTORS

ATRAUMATIC EXTRACTION OF IMPLANTS

Extraction kit

- Five exclusive extractors suitable for the explantation of osseointegrated implants when these are no longer functional or become unnecessary in a new prosthetic situation.
- 200 Ncm counter torque wrench for breaking the bone-implant bond.
- Handle for transporting the extractor plus 3 wrench extenders.



Trephines kit

A kit of atraumatic trephine dental burs, which make an ultra-fine cut that allows for freeing up the area of maximum osseointegration preserving the surrounding bone, by only milling the first 3 millimetres.

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Comercial B.T.I. Institute España, S.L.

San Antonio, 15, 5º | 01005 Vitoria-Gasteiz (Álava), Spain
Tlf.: +34 945 140 024 | Fax: +34 945 135 203
www.bti-biotechnologyinstitute.com