Nobel Biocare N1™ concept: biologically friendly innovation reduces cell death

Clinical relevance

Preserves the vital bone
and reduces cell damage, demonstrated to promote osseointegration.

Simplified osteotomy protocol
with most implants placed after only two drilling steps.

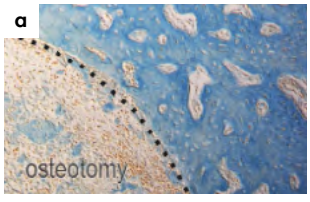
Successful implant placement
with predictable insertion torque even in sites with poor bone quality and quantity.

An Osteotomy Tool That Preserves Bone Viability: Evaluation in Preclinical and Clinical Settings. **Bahat O, Yin X, Holst S, Zabalegui I, Berroeta E, Pérez J, Wöhrle P, Sörgel N, Brunski J, Helms JA.** *Journal of Clinical Medicine*. 2022;11(9):2536.

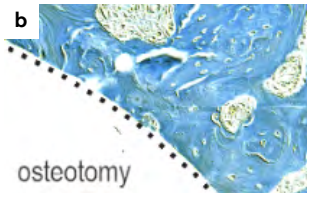
The results: pre-clinical

- Less bone damage and cell death compared to conventional protocol.
- Osteoconductive bone coagulum retained in OsseoShaper osteotomy.

OsseoShaper



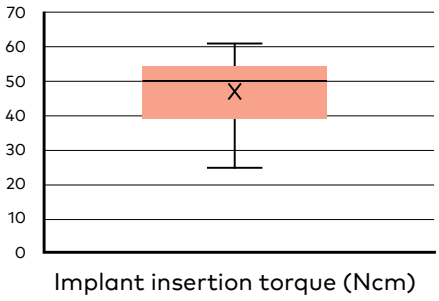
Conventional drill



Bone coagulum visibly retained in osteotomy with OsseoShaper (a). Conventional osteotomy is devoid of cells (b).

The results: clinical

- 14 of the 15 (93.3%) osteotomies were prepared in only two drilling steps.
- All implants accurately followed the osteotomies.
- Predictable mean final implant insertion torque of 46.9 ± 10.3 Ncm, despite poor bone quality and quantity at all sites.

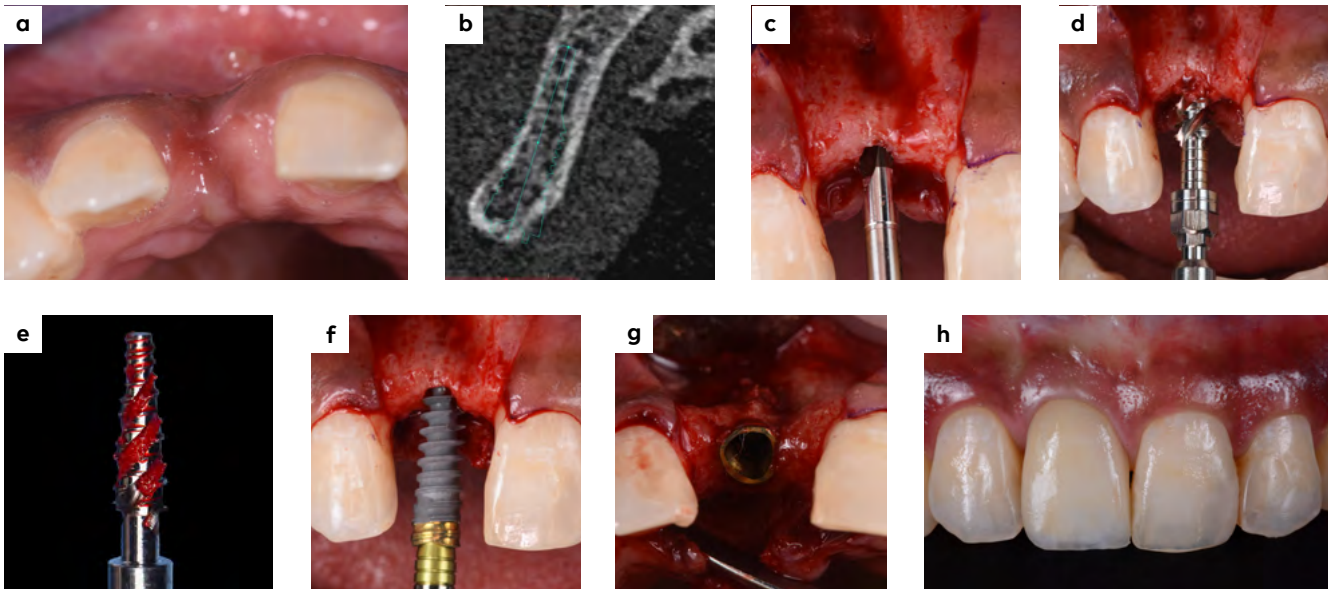


Study design

Animal model and retrospective clinical case series

Histomorphometric analyses - 36 rodents + **7 patients** | **Challenging bone conditions** | **15 implants** | **Delayed loading**

Sample clinical case from the study



Images courtesy of Dr. Oded Bahat, USA

A 38-year-old female patient required rehabilitation of a missing maxillary central incisor. Intraoral exam and CBCT showed a pronounced buccal concavity (a, b) and soft bone (b). The osteotomy was created with the OsseoDirector (c) followed by OsseoShaper (d) at low speed (50 rpm) and without irrigation. Note the bone chips within the OsseoShaper threads upon its withdrawal from the osteotomy (e). A Nobel Biocare N1 concept implant was placed with the final insertion torque of 45 Ncm (f, g). Clinical view at 3 years (h).

Authors' conclusion

This innovation in implant site preparation preserves vital anatomical and cellular structures while simplifying surgical protocols.

More to explore

Read on PubMed

FOR - Safety and effectiveness of the N1 Concept

LinkedIn Dr. Bahat

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