The clinical and radiographic outcome of single implants placed with guided surgery and immediate non functional loading: a preliminary study.


Introduction
Flapless implant surgery has generally been regarded as a blind procedure because of the difficulty in evaluating alveolar volume, which can increase the risk of perforating the cortical plates and/or adjacent teeth. At present, computed guided surgery allows us to operate using a minimally invasive approach which has advantages such as minimal bleeding, no need for sutures, a shorter surgical time and a reduction of patient morbidity.

Purpose
To evaluate the outcome of dental implants placed using a guide surgery protocol with immediate loading of dental prosthesis and to assess patients degree of pain, discomfort and satisfaction.

Material and methods
Inclusion criteria: patients with unitary edentulous areas; sufficient bone height and width (at least 5 mm) to allow implants of 3.8 mm in diameter and a length of 8.5 mm; an occlusal pattern that would ensure the stability of the adjacent teeth and at least 3 mm of soft tissue.

Presurgical procedure: Planification was done using 3 Diagnosys® and the guide was created by PlastyCAD (3DIEMME, Cantu´CO, Italy).

Surgical procedure: Data collection: Clinical and radiographic evaluation of peri-implant tissues: at the time of implant surgery, and after 1 and 4 weeks. Degree of pain and discomfort: 2 days and 1 week after surgery. Patient satisfaction: at postoperative follow-up intervals of 1 and 2 months. A specially designed visual analog scale (VAS) from 0 to 10 was used for data acquisition.

Results
The mean pain score on the visual analog scale at follow-up was within the range for little or no pain. Patient discomfort was minimal. No implants were lost after 2 months (range 2 and 4 months), resulting in a 100% survival rate. The overall mean satisfaction rate was 9.

Discussion
The limited scientific evidence available suggests that guided placement has at least as good implant survival as conventional protocols. New technologies combining data from CBCT with information on the soft tissues and crown morphology, obtained by means of optical digital high-resolution scanners, should be encouraged.

Conclusion
Future long-term clinical data are necessary to identify the impact of this technology on patient quality of life and to justify additional radiation doses, effort, and costs associated with computer-assisted implant surgery.

References: