

SCIENTIFIC PAPERS

FULL-ARCH REHABILITATION
OF EDENTULOUS JAWS
WITH STRAIGHT
AND TILTED IMPLANTS.
PRELIMINARY RESULTS.

CUCCHI A.1

GHENSI P.2

CECCHINI S.1

BRESSAN E.2

CORINALDESI G.1

54

FULL-ARCH REHABILITATION OF EDENTULOUS JAWS WITH STRAIGHT AND TILTED IMPLANTS. PRELIMINARY RESULTS.

CUCCHI A.1
GHENSI P.2
CECCHINI S.1
BRESSAN E.2
CORINALDESI G.1

INTRODUCTION

The rehabilitation of totally edentulous jaws, especially in posterior regions, is often challenging for clinicians because of reduced bone volume due to long-term edentulism. Bone grafting procedures to increase bone volume for implant placement may be a viable treatment option but they often imply demanding surgery and can be associated to complications and high costs. In the last years, several clinical studies have reported that tilted implants may represent another feasible treatment option. The aim of this prospective study was to evaluate implant success rate and crestal bone loss around tilted and straight implants supporting immediate loading full-arch rehabilitation. Preliminary results after 6 months of follow-up are reported.

MATERIALS AND METHODS

20 consecutive patients with edentulous maxilla and/or mandible were enrolled. Each patient received four or six implants that were immediately loaded in order to support a full-arch fixed prosthesis. A total of 102 expanding tapered design implants were used: 58 straight implants and 44 tilted implants were immediately or delayed inserted. Final insertion torque value was recorded. Provisional prostheses were delivered within 72 hours, and definitive ones were delivered 4 to 6 months later. Clinical and radiographic examinations were scheduled with a 6-month follow-up of functional loading according to a well-established protocol to evaluate implant success rates and crestal bone levels. Statistical analysis was used to find significant differences or correlations ($P=0.05$).

RESULTS

During implant surgery, significant differences were noted for insertion torque scores, since they were 52.5 ± 17.2 Ncm and 71.4 ± 25.1 Ncm for straight and tilted implants, respectively. After 6-month follow-up, implant success rates were 96.5% for straight implants and 98.3% for tilted implants. Changes in crestal bone level of 0.6 ± 0.5 mm for straight implants and 0.7 ± 0.8 mm for tilted implants were recorded. No statistically significant differences in crestal bone loss and in implant success rate were observed between straight and tilted implants. Implant site - post extraction or healed – resulted a significant influencing factor in implant success rate.

DISCUSSION AND CONCLUSION

Full-arch rehabilitation supported by straight and tilted implants could be considered a predictable approach for edentulous jaws. Axial and non-axial implants seem to have similar behaviour during functional loading.

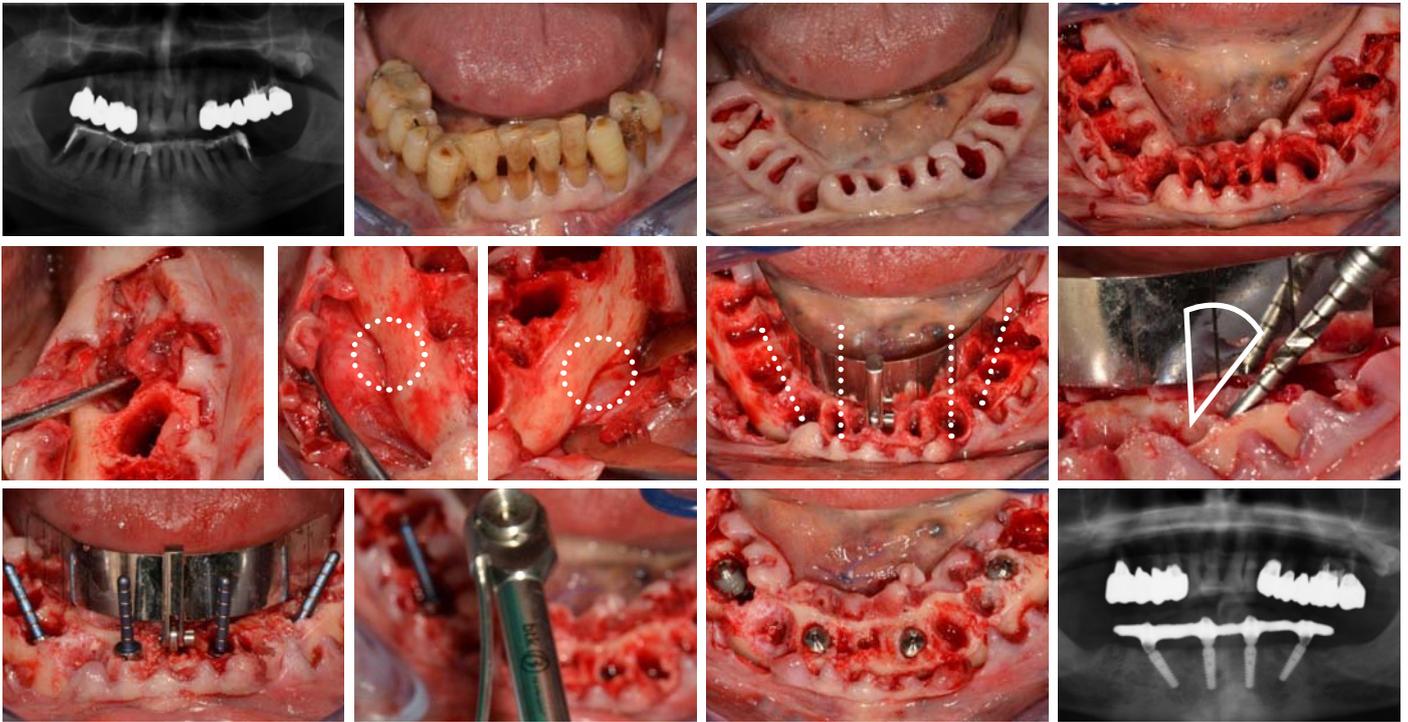
1

[1] DIBINEM - Università degli Studi di Bologna. U.O. Chirurgia Orale e Maxillo-facciale - Prof. Claudio Marchetti

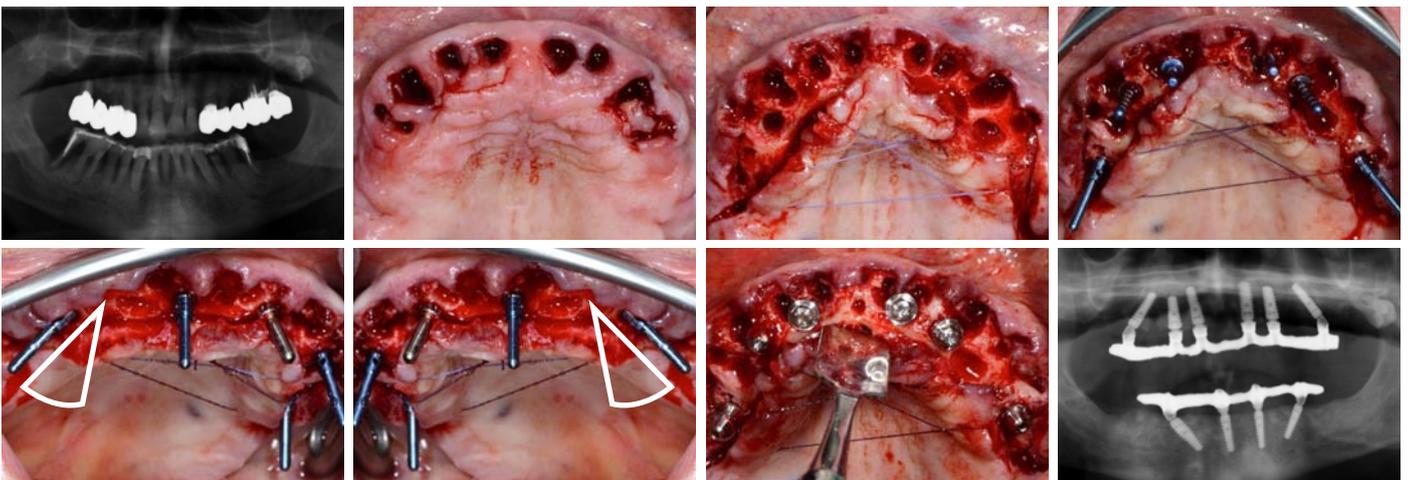


[2] Dipartimento di Neuroscienze - Università degli Studi di Padova. Clinica Odontoiatrica - Direttore: Prof. Edoardo Stellini





2



1. Krekmanov L, Kahn M, Rangert B, Lindström H. Tilting of posterior mandibular and maxillary implants for improved prosthesis support. *Int J Oral Maxillofac Implants* 2000; 15:405–414.
2. Aparicio C, Perales P, Rangert B. Tilted implants as an alternative to maxillary sinus grafting: a clinical, radiologic, and periosteal study. *Clin Implant Dent Relat Res* 2001; 3:39–49.
3. Aparicio C, Arevalo X, Ouzzani W, Granados C. A retrospective clinical and radiographic evaluation of tilted implants used in the treatment of the severely resorbed edentulous maxilla. *Appl Osseointegration Res* 2002; 3:17–21.
4. Fortin Y, Sullivan RM, Rangert B. The Marius implant bridge: surgical and prosthetic rehabilitation for the completely edentulous upper jaw with moderate to severe resorption: a 5-year retrospective clinical study. *Clin Implant Dent Relat Res* 2002; 4:69–77.
5. Gotfredsen K, Berglundh T, Lindhe J. Bone reactions adjacent to titanium implants subjected to static load. A study in the dog (I). *Clin Oral Implants Res* 2001; 12:1–8.
6. Schnitman PA, Wöhrle PS, Rubenstein JE, DaSilva JD, Wang NH. Ten-year results for Brånemark implants immediately loaded with fixed prostheses at implant placement. *Int J Oral Maxillofac Implants* 1997; 12:495–503.