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Retrospective 10-year follow-up examination of the TiOblast®-implant in the edentulous, not-augmented mandible

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Introduction

For dental implant systems, clinical long-term follow-up examinations with high patient numbers are necessarily needed but rarely available (1, 2). Therefore, the following study evaluated the cumulative survival rate (CSR) of the TiOblast®-implant (Astratech, Sweden, figure 1a) in the edentulous mandible without prior bony augmentation 10 years after prosthetic maintenance (figure 1b).

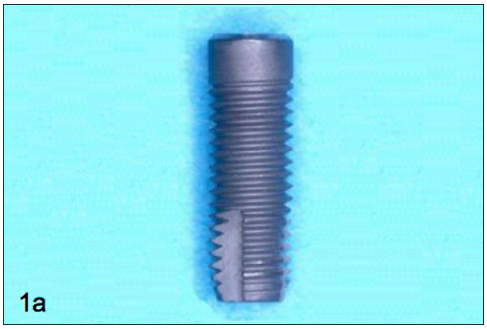

Fig. 1a: TiOblast®-implant

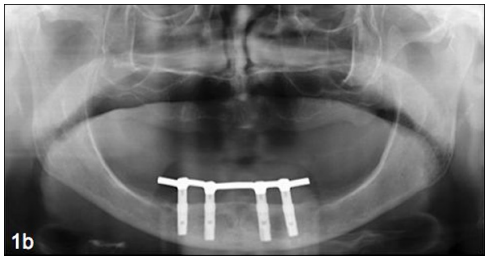

Fig. 1b: 4 TiOblast®- implants in the edentulous mandible

Material and Methods

216 TiOblast®-implants were inserted in 45 patients (mean age: 64 years (41-86)) between September 1994 and May 2005.

Indication: edentulous mandible;
no prior bony augmentation.
- 3 patients (15 implants; 7%) were implanted after radiation therapy, 10 patients (45 implants; 21%) were irradiated after operation.

Follow-up examination:
- CSR
- Assessment according to different success criteria (Albrektsson (3) and Buser (4))
- Investigation of vertical bone loss.

Results

CSR:
- Total implants (TI; n=216): after 85 months (standard deviation (STD): 34 months) 203 implants (94%) in situ (figure 2).
- Irradiated implants (II; n=60): after 85 months (STD: 31 months) 58 implants (97%) in situ.
-- Reasons for implant loss:
-- No bony healing (n=8)
-- periimplantitis (n=5).

Clinical Assessment of success:
- A clinical control-examination was conducted in 40 patients with 196 implants.
- 5 patients with 20 Implantaten were not available.
- The analysis according to the chosen success criteria showed cummulative values of - 86% (Albrektsson) and - 91% (Buser).
- The vertical bone loss added up to a mean value of 2.2mm (figure 3).

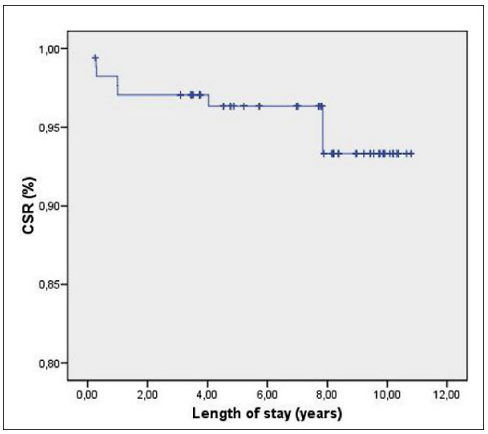

Fig. 2: Implant-related Kaplan-Meier-analysis of the implants in the centre of this study (n=216)

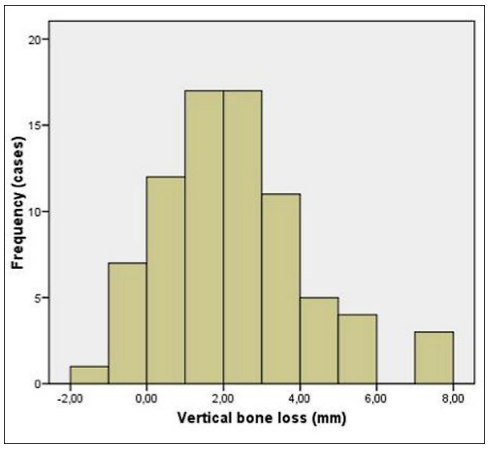

Fig. 3: Vertical bone loss after 10 years of prosthetic maintenance (n=89; min.:-1.23mm; max.:7.83mm; STD: 1.94mm)

Conclusions

Especially in regard to the "critical" patients (28% of the implants in the irradiated mandible), the implant system showed, with an in situ rate of 94% after 10 years of clinical use, satisfying results.
A mean bone loss of 2.2mm after 10 years semms to be acceptable; similar long-time studies 1 ,5 could examine a mean bone loss of 0.2mm per year.

Literature

1. Rasmusson L, Roos J, Bystedt H.: A 10-year follow-up study of titanium dioxide-blasted implants. Clin Implant Dent Relat Res. 2005;7(1):36-42.
2. Schulda C, Steveling H. [Ten-years-results with the ASTRA TECH implant system]. Implantologie 2006; 14: 81-92.
3. Albrektsson T, Zarb G, Worthington P, Eriksson AR. The long-term efficacy of currently used dental implants: a review and proposed criteria of success. Int J Oral Maxillofac Implants. 1986 Summer;1(1):11-25.
4. Buser D, Brägger U, Lang NP, Nyman S. Regeneration and enlargement of jaw bone using guided tissue regeneration. Clin Oral Implants Res. 1990 Dec;1(1):22-32.
5. Schwartz-Arad D, Kidron N, Dolev E.: A long-term study of implants supporting overdentures as a model for implant success. J Periodontol. 2005 Sep;76(9):1431-5.

This Poster was submitted by Dr. Peer W. Kämmerer.

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Klinik und Poliklinik für Mund-Kiefer- und Gesichtschirurgie
Plastische Operationen

Retrospective 10-year follow-up examination of the TiOblast®-implant in the edentulous, not-augmented mandible

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Abb. 1a: TiOblast®-implant; Abb. 1b: 4 TiOblast®- implants in the edentulous mandible.

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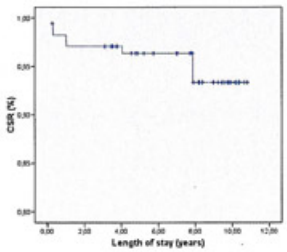

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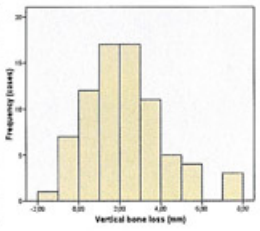

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