

at the end of the period of consolidation. The intra-oral and extraosseous distractor was fixed to both basal and osteotomized bone. After 5 to 10 days of latency the distractor was activated about 1 mm per day. At the wanted alveolar high the distraction was stopped. At the end of the phase of consolidation, the distractors were removed and intra-oral implants were inserted. Three 3 months later healing screws were inserted and patients were referred to the dental practitioner for the prosthetic rehabilitation. **Results:** The average of the distraction was 14 mm. 3 patients had full oral rehabilitation. The others rehabilitations are in process. **Conclusions:** The vertical alveolar distraction in mandibular reconstructed using fibula free-flap must be proposed if feasible.

#### P.378 Hydroxyapatite ceramics for restoration of alveolar bone

G. Salms<sup>1</sup>, I. Salma<sup>1</sup>, A. Skagers<sup>1</sup>, G. Zigurs<sup>1</sup>, M. Pilmane<sup>2</sup>, J. Vetra<sup>2</sup>, V. Groma<sup>2</sup>, L. Berzina-Cimdina<sup>3</sup>. <sup>1</sup>Riga Stradins University Institute of Stomatology, <sup>2</sup>Institute of Anatomy and Anthropology, <sup>3</sup>Riga Technical University, Riga, Latvia

**Objectives:** To evaluate early reactogenicity of porous synthetic HA ceramic implants in experiment and late outcomes in size, shape and density of previous insufficient alveolar bone after extractions and/or dental implant placement looking for biocompatible materials more stable to resorption as autologous bone grafts.

**Methods:** HA synthesis by solution-precipitate method, followed by calcination at 800°C 1 h, milling to grain sizes 20 micrometer powder, sintering of pressed samples at temperature 1100°C 0.5 h, grinding to granules 0.2–0.7 mm. Porosity of material was 35–40%, Ca/P ratio 1.66. After approval by Latvian central ethical committee for experimental animal research HA ceramics half-cylinders diameter 2 mm were inserted in edentulous part of right upper jaw of 6 New Zealand male rabbits. After two weeks blocks of soft tissue and bone with implant and from left control side were taken out. Sections done with EXACT Grinding system and from paraffin block were stained with hematoxylin/eosin, using biotin and streptavidin immunohistochemical methods for growth factors. HA granules were used on 112 patients to fill sockets and bone loss in one stage with SEMADOS implant insertion and in 82 cases as first stage operation to improve size and shape of alveolar bone valid for implant insertion. Total 254 Semados (BEGO, Bremen) implants were inserted. Single crown metal-ceramic restoration in 49 cases, as fixed bridge in 54 patients. Evaluation of out-comes included clinical examination, X-ray with radiodensitometry. Biopsies of alveolar soft tissue at second stage surgery were taken in 24 cases. Slices were stained with hematoxylin-eosin and for immunohistochemistry of collagen types.

**Results:** In experiment samples distinction between implant and control side was in expression of transforming growth factor (TGFbeta) which was in moderate up to marked number of bone cells while in control side was no expression. In clinical part no complications were in wound healing. Osseointegration failed of 4 implants in upper jaw. Implants were taken out and holes were filled with HA granules, after 6 months bone/HA composite was sufficient for implant stability and successful loading after another 6 months. Patients were satisfied with functional results in all cases, but not with esthetic results in 8 cases caused by alveolar bone deficiency in anterior maxilla. Radiodensitometry investigation obtained increase in optical density of alveolar structure significantly in group more as three years after loading. Histological and immunohistochemical data of gingival samples 6 months after HA implantation in part of inflammatory response, vascularity and types of collagen were close to normal.

**Conclusions:** Implantation of HA ceramics into rabbit upper jaw resulted in increase of TGFbeta expression which may explain osseoinductive action of HA. Granules of synthetic porous HA ceramic have a good biocompatibility even in infected wounds

after teeth extractions and provide long term stability of newly formed bone/HA composite in size and shape.

#### P.379 Immediate load of nanostructured Ti implants

D. Hrusak<sup>1</sup>, L. Dluhos<sup>1</sup>, C. Arnold<sup>2</sup>, O. Moztarzadeh<sup>3</sup>, L. Hosticka<sup>3</sup>, P. Andrl<sup>3</sup>. <sup>1</sup>Implant, Ostrava, Czech Republic; <sup>2</sup>Teplice, Czech Republic; <sup>3</sup>Department of Maxillofacial Surgery, University Hospital and Medical Faculty Pilsen, Charles University Prague, Czech Republic

**Objectives:** The objective of this paper is the evaluation 3 years experience of a nanostructured CP Grade 4 Titanium dental implants (NANO-Ti implants). Nanostructuring of titanium by SPD processing has made the material with significantly superior mechanical performance when compared to conventional CP Grade 4 titanium. Cytocompatibility studies with fibroblast mice cells L929 indicated that the nanostructured Ti surface has a significantly higher cell colonization, suggesting more rapid osseointegration. The design of a reduced 2.4 mm diameter implant has the strength equivalent to the conventional of 3.5 mm diameter implant.

**Methods:** NANO-Ti implants have been successfully designed, and fabricated. Clinical cases of 250 patients, all receiving immediate load implants, were analyzed during a 3 year follow up period. All NANO-Ti implants were implanted as immediate load implants, the usual success criteria were evaluated.

**Results:** Primary retention of all implants was very good; on the day of surgery all patient received a complete provisional bridge. Healing of the operative wound passed without complications, with subsequent attachment of a definitive metaloceramic bridge completing treatment. Overall success rate of NANO-Ti implants is depending on the implant site. Predominantly the mandible was the indication for NANO-Ti implants.

**Conclusion:** NANO-Ti implants are a good choice in cases of transversal alveolar bone deficiencies.

#### P.380 Immediate maxilla prosthesis for maxillectomy patients

T. Sato, S. Ikeuchi, H. Kawana, K. Yago, T. Nakagawa, S. Asanami. Department of Oral & Maxillofacial Surgery, School of Medicine Keio University, Shinjyuku-ku, Japan

**Objectives:** Our treatment strategy for surgical therapy of malignant maxilla tumor are: 1. We select the minimum invasive surgical method, and reduce of the total surgery time. 2 We conduct early oral taking and recovery the mastication and the swallowing function. 3. We do effort to reduce the post operative complications and the total hospital time, and conduct early social rehabilitation.

We perform immediate reconstruction using maxilla prosthesis for in some cases of after maxillectomy patients. We present our methods and evaluate it comparing of such as the free flap reconstruction.

**Methods:** We performed the immediate reconstruction using prosthesis to 5 maxillectomy patients (3 male and 2 female, average age was 64-year-old). Patients disease: 3 patients had Squamous cell carcinoma, one patient had Adenosquamous carcinoma, one patients had Verrucous carcinoma. Operative methods: 4 patients had sub total maxillectomy, one patients had partial maxillectomy.

**Results:** There are no post operative bleeding and infection. Tracheotomy were performed 2 patients, but both of them were removed tracheotomy kanule 4-day post operatively. Oral taking had been started 5-day post operatively. 2 patients had limitation of mouth opening. One patient had cheek deformity. No patients had speech disability. All patients could have early social rehabilitation.

**Conclusions:** The treatment strategy of reconstruction of after maxillectomy, it should be concerned the radical cure of tumor,