



Clinical Case Studies

OSIQ[®] & ELIZ[®]

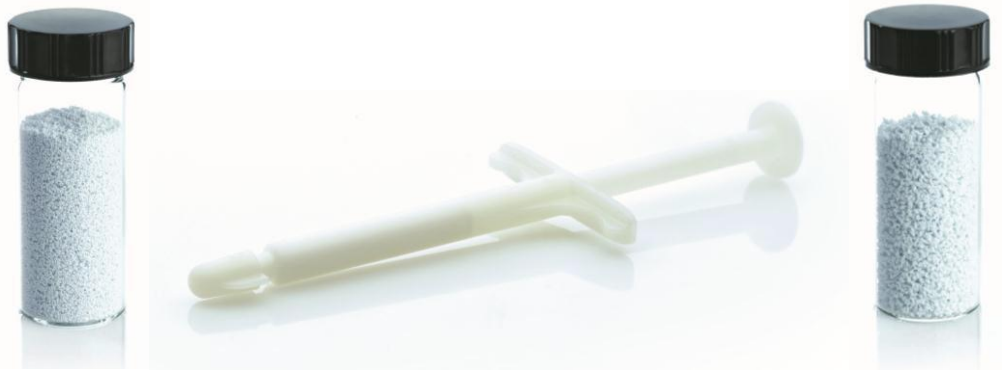


**Krasnodar Centre for Periodontology
and Dental Implantation
Russia**



KYERON

Clinical Case Studies OSIQ® & ELIZ®



Overview

In the period between August 2010 and February 2012, bone graft substitutes were utilised in the form of granules (ELIZ®) and nano-HA-paste (OSIQ®) at the Krasnodar Centre for Periodontology and Dental Implantation (the Centre is headed by Professor M. D. Perova, MD, Honoured Doctor of the Russian Federation), to evaluate their performance in the short- and long-term.

In four cases, it was used after surgical removal of small and medium sized bony defects of the alveolar ridge in the jaw, after the excision of odontogenic cysts and cystic granulomas. In three cases, it was used in the surgical treatment of chronic general periodontitis of medium severity (around 50% periodontal attachment loss), in two cases, for the treatment of late stage peri-implantitis.

A positive result was achieved in all cases of treatment: an improvement in the patients' clinical condition, the elimination of inflammatory signs and symptoms, the normalization in the quality of soft tissue surfaces, a reduction in the probing depth of rehabilitated peri-implant and periodontal tissues, and an increase in dental stability. There were zero registered negative results or no changes in conditions.

Conclusion

Based on the clinical findings of these few cases and the short study duration, we can conclude that the bone graft substitutes have high osteoconductive properties. Particular attention should be drawn to the nano-HA-paste (OSIQ®) which is convenient to use in wounds with good blood supply in the oral cavity. A lack of side effects during all stages of patient monitoring makes the treatment results highly predictive.

OSIQ® and ELIZ® undoubtedly has great potential for use in surgical dentistry and periodontology.

Clinical Case Study Granules (ELIZ®)

Clinic: Krasnodar Centre for Periodontology and Dental Implantation, Russia

Patient Age: 44

Case: In September 2010, a diagnosis was made of an odontogenic cyst in the upper jaw from the 13th tooth, 17mm in diameter, with a subacute fistulous tract forming in the direction of the exterior cortical bone. Percussion of the causal tooth produced pain, with II degree of instability. The patient's medical history included endodontic treatment of the tooth 15 years ago, with a few exacerbations in the pathological process occurring over the last 3 years.

Procedure: After revision endodontic treatment, the cyst was removed, with the bony defect filled in with granules (ELIZ®), introduced into the blood clot. A non-resorbable polytetrafluoroethylene membrane (e-PTFE, Ecoflon) was implanted over the bony incision, and the wound was stitched together with monofilament threads; drainage was not used.

Clinical Follow-up: It was noted at the clinical review six months after treatment, that there was a lack of inflammatory signs and symptoms, palpation of the alveolar ridge in the affected area was painless, and there was no longer any pathological movement of the 13th tooth.

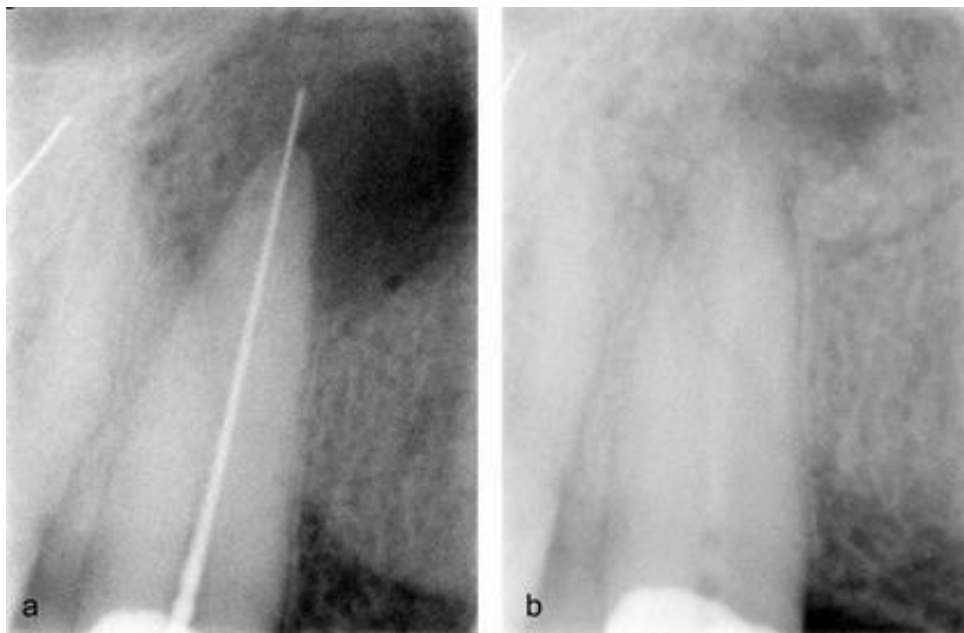


Figure 1: Long-term results of bony defect replacement (18 months after surgery): a) before treatment X-ray; b) after treatment – defect boundaries are unclear, nearly the whole area of the defect has been replaced with radiopaque structures with a looped pattern, a new periodontal-ligamentous space can be seen around the top of the affected root. A small radiolucent area does however remain in the central part of the defect.

Clinical Case Study Granules (ELIZ®)

Clinic: Krasnodar Centre for Periodontology and Dental Implantation, Russia

Patient Age: 57

Case: In January 2011 the patient was diagnosed with generalized chronic periodontitis of medium to high severity (around 65% periodontal attachment loss). The patient's medical history included hypothyroidism, for which the patient was having hormone replacement therapy. The patient underwent non-surgical treatment numerous times at another clinic; however, the patient stated that the dental and periodontal condition was gradually worsening.

Procedure: After excision of untreatable teeth, splinting of unstable teeth and removal of supracontacts, 4 segmental surgical interventions were undertaken to regenerate the periodontal tissues, with the use of granules (ELIZ®) and a non-resorbable barrier membrane (e-PTFE, Ecoflon).

Clinical Follow-up: On assessment, the following short-term (6 months) and long-term (12 months) surgery results were noted: a lack of inflammatory signs (bleeding, swelling, hyperemia) in the periodontal tissue, probing depth reduced to an average of 2mm (as compared to 7mm prior to treatment), and average gum recession edge ≤ 2.3 mm. Dental instability, after the removal of splints, had decreased from stage II-III to stage I.

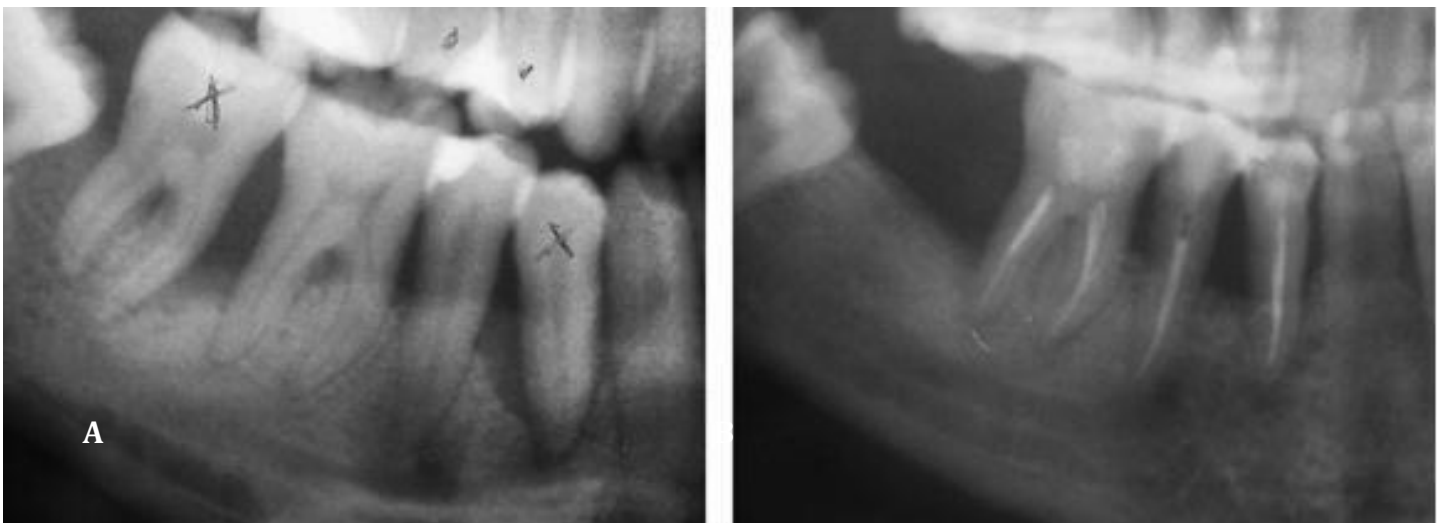


Figure 1: Long-term results of surgical treatment of periodontitis (February 2012): a) X-ray of the 4th segment of the mandible before treatment – deep intraosseous and crateriform periodontal defects can be seen; b) after treatment, there is noted growth of radiopaque structures with filling in of the bifurcation defect in the 46th tooth and the crateriform defect in the 44th tooth, with no clear boundary noted between the osteoplastic material and the surrounding tissues.

Clinical Case Study Nano-HA-Paste (OSIQ®)

Clinic: Krasnodar Centre for Periodontology and Dental Implantation, Russia

Patient Age: 52

Case: In July 2011, active peri-implantitis was diagnosed in the region of the fourth segment of a titanium dental post, which was implanted 3 years ago.

Procedure: Surgery was undertaken to assist bone regeneration using Nano-HA-Paste (OSIQ®) and a non-resorbable barrier membrane (e-PTFE, Ecoflon).

Clinical Follow-up: At the clinical review 6 months later, there were no noted inflammatory signs or symptoms, a dense soft tissue cuff had formed around the implant, and probing depth was ≤ 3 mm.

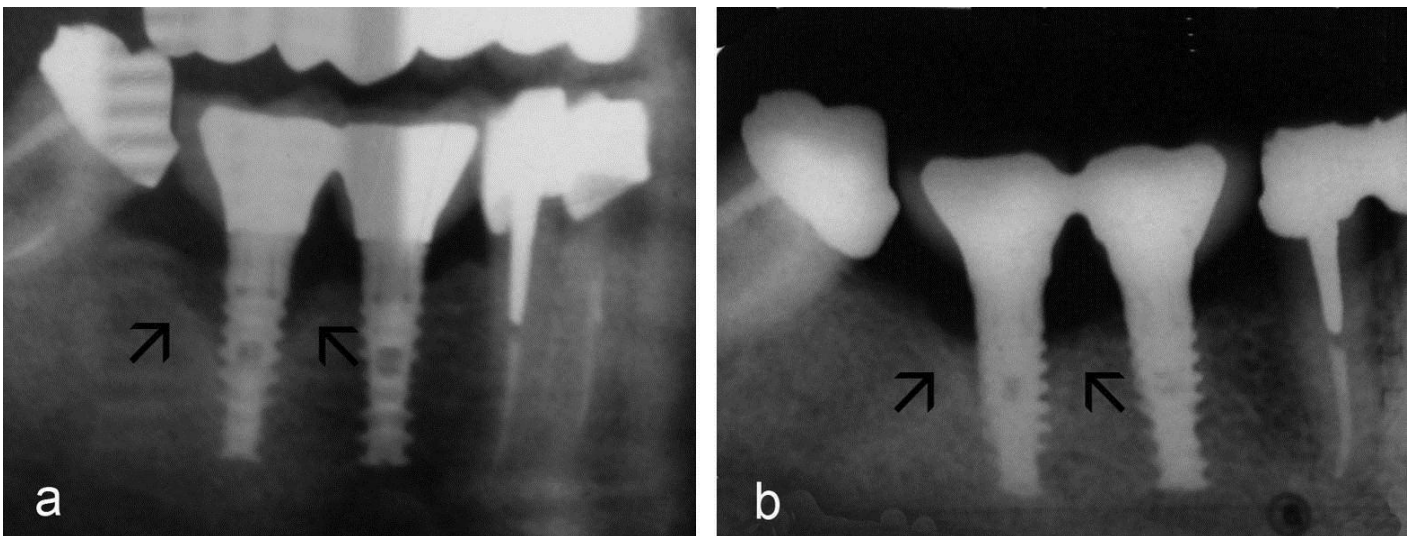


Figure 1: Short-term results of surgical treatment of peri-implantitis (February 2012): a) before treatment X-ray – arrows are pointing to the marginal bone loss in the area of the distal dental implant; b) after treatment, the defect has been replaced with radiopaque structures, there is a small area of radiolucency where the post is in contact with the newly formed tissue.

Clinical Case Study Nano-HA-Paste (OSIQ®)

Clinic: Krasnodar Centre for Periodontology and Dental Implantation, Russia

Patient Age: 47

Case: In July 2011 the patient was diagnosed with chronic apical granulomatous periodontitis of the 24th tooth, with a vestibular fistula containing seropurulent exudate at the level of the middle third of the root.

Procedure: The tooth was removed and the wound scraped out, and the bony defect with its blood clot was implanted with Nano-HA-Paste (OSIQ®). The bony wound was covered with a dual layer collagen membrane (BioGide), the mucoperiosteal flap was split, and the wound stitched closed with monofilament thread, using tension-free mattress sutures.

Dental implants were placed into this area four months after surgical intervention (November 2011). When the implant cavities were being created, the presence of good quality, young bone tissue of medium density and with good blood supply, was noted in the place of the excised 24th tooth. There was also corticalization of the outer layer of the maxillary bone, which was visually identical to the surrounding tissue.

Clinical Follow-up: Seven months after the initial surgical intervention (February 2012), the patient's condition was normal, there were no soft tissue inflammatory signs and symptoms, palpation of the alveolar ridge was painless, implant percussion was negative, there was no implant instability, transgingival implant healing was present, and hygiene level was within normal.

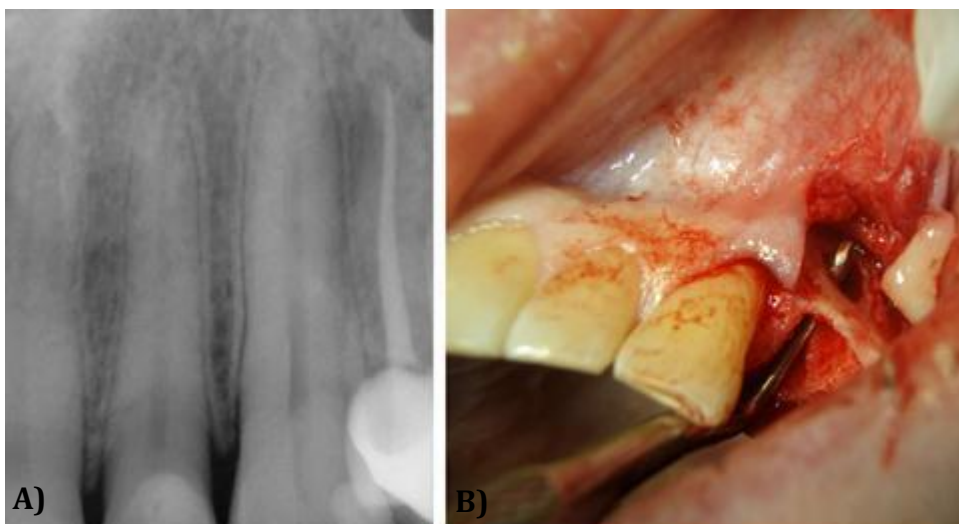


Figure 1: The clinical and radiographic pictures before the osteoplastic procedure: a) the medium-sized cystic granuloma from the 24th tooth; b) the bony defect after tooth extraction and wound scraping, fenestration of the bony plate on the vestibular side, 6mm in diameter.

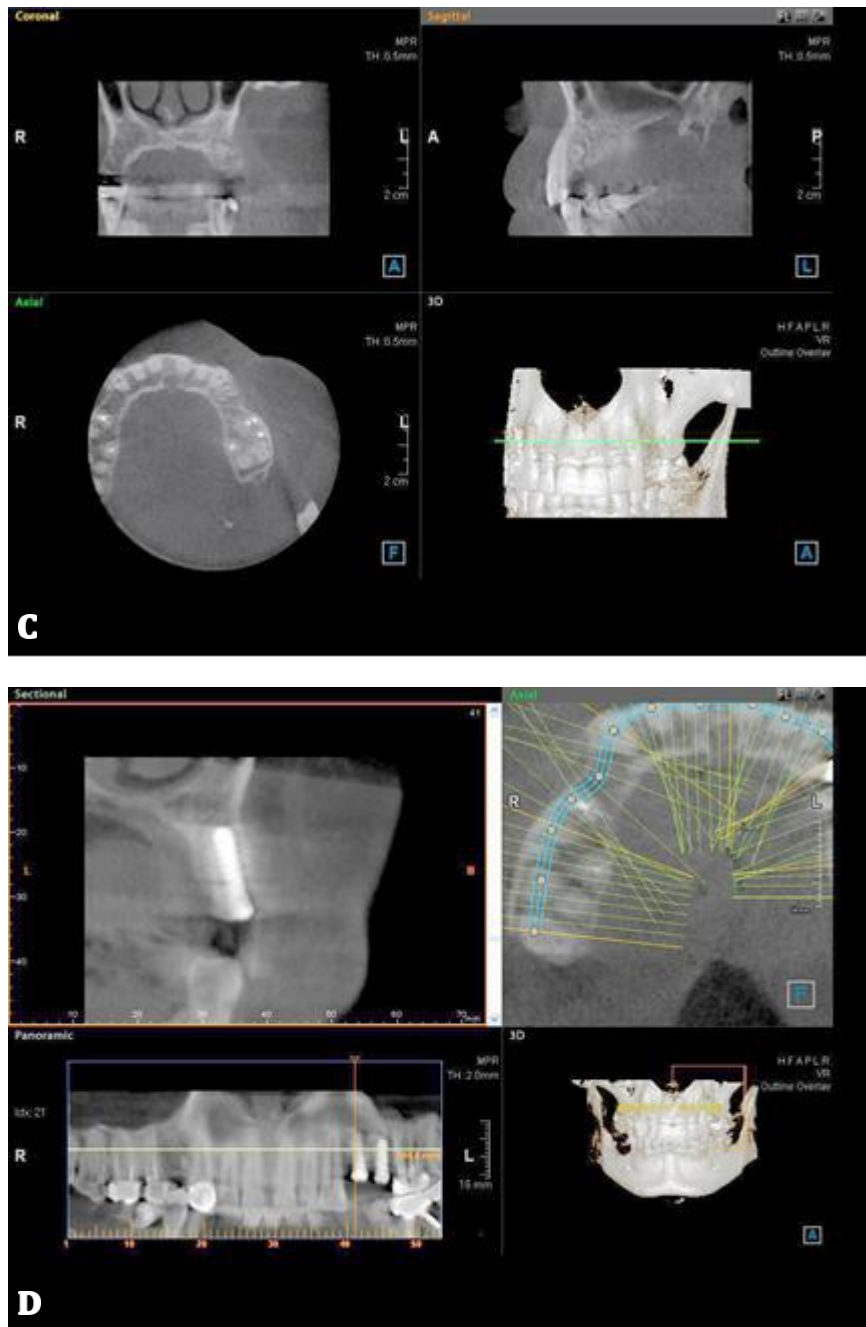


Figure 2: CT scan. Short-term osteoplasty results of the maxillary alveolar ridge: c) three months after osteoplasty, an area of increased radio-density can be seen in the coronal and sagittal planes, corresponding to the area of implanted material, and visually different from the surrounding bony structures; the looped pattern of formed tissue can be seen; the external cortical plate is in the process of formation; d) five months after osteoplasty, and one month after dental implantation; optimal positioning of the dental implants in the 2nd segment can be seen in the panoramic option, with full immersion into the regenerating bone; in the sagittal cross-section view, the earlier fenestrated area in the alveolar ridge is showing a thick external cortical plate; at this time the structure of the regenerating bone is still somewhat different to the normal trabecular bone structure of the jaw.