a treatment option in the rare delayed cases of failed nonsurgical treatment.

http://dx.doi.org/10.1016/j.ijom.2017.02.895

Dental Implantology, Preimplant Surgery and Grafting

Miniplate temporary orthodontic bone anchorage devices for maxillary molar intrusion — the challenges

V. Bhatt*, J. Parrish, P. Chhabra, S. Nute

Southend University Hospital Foundation NHS Trust, United Kingdom

Background: Miniplate orthodontic bone anchorage (OBA) devices are being increasingly utilised for management of certain malocclusions. Anterior open bites are renowned for being the most challenging to correct, along with the most likely to relapse. Literature shows good outcomes when utilised for closure of small anterior open bites and the opportunity to minimise osteotomy movements or even avoid bimaxillary surgery.
Findings: The author presents a personal series of cases in which the anterior open bite was greater than 6 mm, and discusses the challenges faced mid-treatment with the miniplate OBA and how they were overcome:
- Flaring of first permanent molars on applying traction.
- Gauging appropriate tightness of powerchain — balance between traction forces and risk of breakage.
- Interference of occlusion due to wisdom teeth.
- Mucosa overgrown to cover the OBA before treatment commences.
- Difficulty in correction of skeletal asymmetries.

Conclusion: The use of miniplates is an effective management strategy for partial or complete correction of open anterior bites. They can reduce size of osteotomy movements or limit the surgery to a single jaw, reducing morbidity and reducing postoperative recovery periods. It does come with some inherent problems and challenges.

http://dx.doi.org/10.1016/j.ijom.2017.02.896

Prospective randomised clinical trial using autogenous bone or beta-tricalcium phosphate in maxillary sinus lifting: histological and tomographic results

F. Boos Lima*, R.S. Pereira, S.M. Lima Junior, I.R. Garcia Junior, R. Okamoto, E. Hochuli-Vieira

State University of São Paulo – UNESP, Araçatuba, Brazil

Objectives: The aim of this study was to analyse the use of the beta-tricalcium phosphate (β-TCP) ChronOS® and autogenous bone (AB) in maxillary sinus floor augmentation by comparing computed tomography (CT), histological, histometric and immunohistochemical analysis.
Methods: 12 consecutive patients underwent bilateral maxillary sinus grafting. One side of each patient was augmented with pure β-TCP and the other sinus was augmented with pure autogenous bone. Patients had their sinus scanned for computed tomography (CT) seven and 180 days after surgery for quantitative comparative analysis of residual volume after graft resorption and remodeling. Prior to implant placement, grafted material was collected from each sinus using a drilling mill for histological and histochemical analysis.
Findings: CT volumetric analysis revealed no statistically significant difference between groups. Histological analysis revealed absorbing granules of β-TCP being substituted by mature bone. Histomorphometric analysis showed the presence of 51.58% of newly formed bone in the β-TCP group and 40.97% in the AB group. There was no statistical difference between the groups. Immunohistochemical evaluated the presence of osteocalcin, Runt-related transcription factor 2 (RUNX2), tartrate-resistant acidic phosphatase (TRAP) and vascular endothelial growth factor (VEGF). Osteocalcin and VEGF were expressed in both groups with similar intensity. TRAP showed a low expression in both groups. RUNX2 was observed only in AB group.
Conclusions: Autogenous bone has superior osteoinductive properties. ChronOS® is a biocompatible and osteoconductive material with similar clinical results to the autogenous bone in this proposed model, even without osteoinductive properties.

http://dx.doi.org/10.1016/j.ijom.2017.02.897

Evaluation of graft resorption following anterior iliac crest bone grafting for the reconstruction of deficient alveolar ridges via general and combined spinal epidural anaesthesia

E. Cansiz*, B.A. Gultekin, T. Sitilci, S.C. Isler

Istanbul University Dentistry Faculty, Oral and Maxillofacial Surgery Department, Istanbul, Turkey

Objectives: The main purpose of the study is to evaluate the graft of iliac block bone grafting performed under general anaesthesia (GA) or combined spinal epidural anaesthesia (CSEA) and assess three-dimensional volumetric changes in the grafted bone.
Methods: The investigators implemented a retrospective study including patients who underwent anterior iliac block bone grafting for maxillary augmentation. The primary predictor variable was GA or CSEA. The outcome variable was volumetric changes at the augmented sites from baseline (V-0) to 3 weeks (V-I) and 4 months (V-II) after surgery by using 3D volumetric analysis technique.
Aim and Hypothesis: The null hypothesis was that iliac crest bone grafting under GA and that under CSEA have different resorption rates with statistically insignificant differences.
Results: The sample comprised 22 patients grouped as follows: GA ($n = 10$) and CSEA ($n = 12$). No significant differences were observed between groups with regard to graft resorption. The total average resorption at the grafted site from V-I to V-II was 34% in both groups ($P < 0.001$).
Conclusion: Iliac block bone grafting for deficient maxillary ridges can be successful under both GA and CSEA. Although there is no statistically significant differences were observed between groups, CSEA may increase patient comfort.

http://dx.doi.org/10.1016/j.ijom.2017.02.898