Astra Implants in Severe Atrophy Patient with Class III Anomaly to Avoid Bone Augmentation after Bisphosphonate Treatment

WALTER Christian[1], WEGENER Joachim[2], WAGNER Wilfried[1]

(1) ORAL AND MAXILLOFACIAL SURGERY; UNIVERSITY MEDICAL CENTER OF THE JOHANNES GUTENBERG-UNIVERSITY MAINZ, AUGUSTUSPLATZ 2, 55131 MAINZ, GERMANY
(2) PROSTHETIC DENTISTRY; UNIVERSITY MEDICAL CENTER OF THE JOHANNES GUTENBERG-UNIVERSITY MAINZ, AUGUSTUSPLATZ 2, 55131 MAINZ, GERMANY

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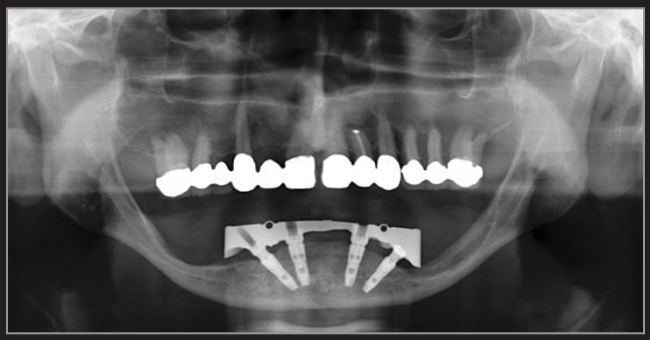
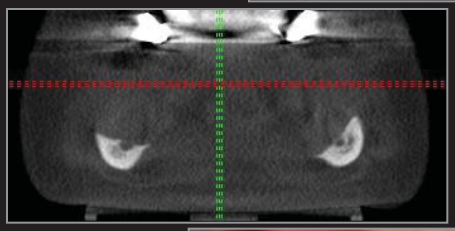
Background: In patients with severe atrophy in the premolar und molar region an augmentation with iliac crest bone is state of the art. Dental rehabilitation in patients using bisphosphonates is complicated since surgical procedures may initiate an osteonecrosis. The risk to develop an osteonecrosis can be evaluated by obtaining the CTX-blood-value which describes the bone turnover rate and inhibition of bone healing (normal CTX-value 400-700 pg/ml, low risk regarding osteonecrosis if CTX >150 pg/ml).

Material and Methods: A 57-year old patient with a class-III anomaly, osteoporosis and being on oral bisphosphonates for approximately 10 years sought a dental rehabilitation and was referred with the intention of an augmentation because of the atrophy in the mandible up to the level of the mandibular nerve. The remaining front teeth were not worth keeping. A blood-CTX-value was obtained (133 pg/ml) indicating an increased risk therefore the bisphosphonate was paused. After the bone turnover recovered (CTX-value 148 pg/ml) surgery was preformed. The remaining teeth were extracted and 4 implants were placed according to the Malo principle.

Results: The teeth were extracted and 4 Astra Tech Osseospeed implants were inserted and covered with healing abutments. A post-operative bleeding induced a disturbed wound healing resulting in exposed bone (CTX-value 163 pg/ml). Only antibiotics and chlorhexidin mouthrinse were prescribed. Another 2 weeks later there was no more sign of infection and exposed bone. A bar was inserted that is wearing a denture.





Figures: Class III configuration (left) with severe atrophy. 4Astra Tech Osseospeed implants were inserted according to the Malo principle (panoramic radiograph). Bar overdenture with removable prosthesis.

Conclusion: Implant surgery can be performed in patients taking oral bisphosphonates especially after a drug-holiday at a lower risk due to the recovered bone turnover and bone augmentations can be avoided using the Malo concept in this case using 4 Astra Osseospeed implants. Placing implants is a less invasive operation compared to bone augmentation and might become a treatment option in some bisphosphonate patients.

Correspondence: PD Dr. Dr. Ch. Walter, walter@mkg.klinik.uni-mainz.de, Oral and Maxillofacial Surgery, University Medical Center, Augustusplatz 2, 55131 Mainz, Germany