

Osteotome sinus floor elevation without grafting: a 10 year clinical and radiological sinus assessment

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Background: The posterior maxilla often provides limited bone height secondary to sinus pneumatization and/or alveolar ridge resorption. Little is known about the long-term sinus reaction outcome when implants are placed in atrophic maxilla using osteotome sinus floor elevation (OSFE) without grafting.

Aim/Hypothesis: This study presents radiological and clinical sinus adverse events gathered 10 years after implant placement using OSFE without grafting.

Material and methods: The 10-year follow-up protocol was approved by the ethics committee for human research of Vaud (Switzerland; reference 393/12). Between April and December 2003, 17 patients (14 women and 3 men; mean age was 54.2 ± 9.6 years, range 38–69 years) were enrolled. Twenty-five implants (≤ 10 mm; Straumann AG) were placed in 17 patients using OSFE without grafting. The mean residual bone height was 5.4 ± 2.3 mm (Nedir et al. 2006, 2009, 2010, 2015). At the 10-year control, according to the American Academy of Otolaryngology-Head and Neck Surgery (AAOHN), patients were specifically asked about signs and symptoms consistent with a diagnosis of acute or chronic sinusitis. The control included also a CBCT examination performed using CS 9300 system (Carestream Health Inc.).

Results: Fifteen patients (23 implants) attended the 10-year control; two of them (2 implants) refused the CBCT examination, they were considered dropped-out. Two patients showed membrane perforation detected before implant insertion, five had multiple implants inserted while one had bilateral sinus augmentation. Four patients reported sinus related pathology: Two patients noted posterior flow existing before implant insertion; one reported dry mouth and hyposmia related to Gougerot-Sjögren disease diagnosed after implant insertion and one patient indicated one episode of maxillary fullness related to flu. CBCT did not show sinus pathology; three cases of membrane thickening around the implant were observed, but without clinical symptoms.

Conclusions and clinical implications: No sinus complications were seen following OSFE without grafting. Absence of clinical and radiological signs is related to the good implant osseointegration maintained along 10 years.