Sinus lift with simultaneous implant placement

Piezosurgery offers the patient a gentle treatment with less complications and time saving benefits.

By Dr. Peter Hentschel

Oral rehabilitation has been paid notice for a long time to regain masticatory function and for aesthetic reasons. Implant placement in the maxilla is often limited due to missing height of the alveolar process, this can be solved by external sinus graft (Bonne 1980). The alveolar crest can be built up to 8-15 mm by Sinus Eleva- tion. The function of the sinus is not touched by the reduced volume, the success rate is between 85% to 95% after 15 years. The lower success rate often comes along with an intra-operative perforation of the Schneiderian Membrane (incidence 23-40%), failures are based on the in some circumstances following complications. In opposite of app 25% perforations with bone milling devices the use of piezo-surgical devices can lead to perforation rates of 5%.

At external elevation and sinus augmentation a second surgical process can be avoided by simultaneous implantation in case of 5 mm bone height. During the Eleva-
tion of Schneiderian Membrane with sandwichechnique autolo-
gous bone and bone substitute materials are used (Kamikawa et al. 2000). To resist the respira-
tory pressure non-resorbable bone substitute material (eg. CompactBone B, bovine Bone) or the cranial bone lid are placed next to sinus membrane.

The patient (36 y, f) was showing an alio loco lost tooth in 15 (Fig. 2). Patients request was aesthetic and masticatory rehabilitation which was suggested by one-
stage lateral sinus elevation. Simultaneously the surrounding space was covered with a re-hydrated Collagen Membrane (Bone Protect Membrane; Den-
tegris, Germany) as protections of the Schneiderian membrane (Fig. 7). Autologous bone was mixed with Compact Bone B and placed in the sinus for stabiliza-
tion (Fig. 8).

After release of the sinus mem-
brane (Fig. 4) the implant tunnel was prepared (Fig. 5) and the Implant (SL Implant; Dentegris, Germany) placed (Fig. 6). Simultaneously the surrounded space was covered with a re-
hydrated Collagen Membrane (Bone Protect Membrane; Den-
tegris, Germany). The pericar-
dium membrane offers very good integration and augmentation of sinus maxillaris (Fig. 10).

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After control of primary stabil-
ity particulate materials was filled laterally and covered with pericard membrane according to GBR standards (Fig.9). The flap was readapted and closed, controlled by X-ray shows axial po-
sitioning and augmentation of sinus maxillaris (Fig. 10).

Reentry after five months was accompanied by full ceramic crown and results in aesthetic and harmonic rehabilitation (Fig. 11).