Sinus lift with simultaneous implant placement

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

By Dr. Peter Hentschel

O ral 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 (Boyne 1980). The alveolar crest can be built up to 8-15 mm by Sinus Elevation. The function of the sinus is not touched by the reduced volume, the success rate is between 85 to 96 % after 15 years. The success rate is between 8-15 mm by Sinus Elevation (Incidence 25-40%), perforation of the Schneiderian membrane along with an intra-operative lower success rate often comes from 85 to 96 %. The function of the sinus is not touched by the reduced volume. The function of the sinus is not touched by the reduced volume.

At external elevation and sinus augmentation a second surgical procedure within piezoelectric stimulation with a prolonged barrier function. The patient (36 y, f) was showing severe angina and aesthetic rehabilitation which was suggested by one stage elevation.

Based on diagnostic planning piezoelectrical window preparation in 15 (Fig.5) was performed after local anesthesia and periostal flap. By choosing a round-oval lid design sharp edges can be avoided which reduces the risk of perforation. After release of the sinus membrane (Fig.4) the implant tunnel was prepared (Fig.5) and the Implant (SL Implant, Dentegris, Germany) placed (Fig.6). Simultaneously the surrounding space was covered with a rehydrated Collagen Membrane (Bone Protect Membrane; Dentegris, Germany) as protections of the Schneiderean membrane (Fig.7). Autologous bone was mixed with Compact Bone B and placed in the sinus for stabilization (Fig.8).

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

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

Case Study

The patient (36 y, f) was showing an allo lipo lost tooth in 15 (Fig. 2). Patient's request was aesthetic and masticatory rehabilitation which was suggested by one stage elevation.

Guided Bone Regeneration (GBR) as state of the art method for bone grafting uses in most cases bioresorbable membranes. Resorbable membranes offer several advantages beside the easy handling, as no need for a second surgical procedure for removal or minimization of complications, e.g. soft-tissue dehiscences.

The during the procedure gained autologous bone can be placed alone or in combination with a bone graft material (eg. Compact Bone B, biphasic Calciumphosphate) around the placed implant. Sinus Elevation with simultaneous implant placement is indicated with up to 97.9% survival rate in after years (Pfeleg et al. 2000).

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Single tooth rehabilitation with implant is the appropriate method instead of conventional use of bridge. In the reported case the situation is aggravated by the lowered sinus and lateral limitation by intact adjacent teeth. For lateral one-stage sinus lift we are using the special designed Sinus-Lift implant for increased primary stability (SL Implant; Dentegris, Germany). The improved stability is based on micro threads with increased contact in neck area. The autologous bone is gained during surgical procedure within piezo surgical window preparation and drilling process (Fig. 1).

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