Zusammenfassung


Schlüsselwörter: nicht-interventionelle Studien, Anwendungsbeobachtungen, Qualitätssicherung, qualitätssichernde Maßnahmen

Maxillary sinus augmentation using vertical bone condensing technique

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Introduction
Treatment of the fully or partially edentulous dentition with dental implants is a commonly and successfully used modality, showing a reliable long-term prognosis. Although this type of treatment leads to functionally predictable and esthetically pleasant results, the comparatively long treatment duration resulting from long healing periods is a major drawback. After tooth loss, the periosteum of the maxillary sinus can exhibit increased osteoclastic activity, which can cause bone resorption. Alveolar bone loss that calls for elevation of the sinus floor to generate sufficient bone volume for implants at least 10 mm long can be categorized by the following:

1. After tooth loss, the periosteum of the maxillary sinus can exhibit increased osteoclastic activity, which can cause bone resorption. Alveolar bone loss that calls for elevation of the sinus floor to generate sufficient bone volume for implants at least 10 mm long can be categorized by the following:

1. an alveolar ridge of 5 to 10 mm, 2. an alveolar ridge equal to or less than 5 mm, and 3. a complete absence of alveolar bone between the sinus floor and alveolar crest. The first category is the most common and often permits simultaneous floor elevation and implantation. Implant placement in the atrophied maxillary posterior ridge with inadequate height of bone to restore masticatory function has always been difficult and challenging for clinicians. In the past few years, much attention and effort have been paid to developing a surgical technique to overcome this problem. Alveolar bone augmentation techniques include different surgical approaches such as guided bone regeneration, onlay grafting, interpositional grafting, ridge splitting and socket preservation. The sinus floor augmentation or elevation is a surgical technique that helps to resolve the problem of deficient bone height in the posterior maxillary region to receive the implants. The surgical technique currently used to augment the sinus floor to place the implant is either the lateral window opening or the osteotome technique.

The procedures for sinus elevation for dental implant placement are as follows:

1. The 2-stage lateral approach: The first stage entails sinus elevation and augmentation, and the second stage entails...
implant placement 6 to 9 months later. This is indicated when the bone height on the sinus floor is less than 4 mm.

- The 1-stage lateral approach: The dental implant is placed simultaneously with sinus elevation and augmentation. This is indicated when the bone height is 4 to 6 mm.

- The osteotome technique or crestal approach: Implants are placed at the same time that the sinus floor is locally augmented. This is indicated when the bone height is more than 5 to 8 mm.

Sinus floor augmentation with autogenous bone grafting for implant placement was first described by Boyne and James in 1970. Tatum developed the method of antrostomy floor grafting, based on a modified Caldwell-Luc lateral approach to the antrum, through the creation of a window in the maxillary bone. In 1980, Misch performed an augmentation of the sinus with simultaneous implant placement. Today, the modified Caldwell-Luc approach is the most generally accepted method, allowing for the benefit of ready access to the sinus, significant elevation of the floor, and thus creation of sufficient bone volume to support the placement of implants. Another benefit of this technique is the broad surgical field visibility it provides. The disadvantages of this technique are the relatively large surgical operation required, need for specialized instrumentation, risk of perforation of the Schneiderian membrane, postoperative symptoms, and cost. Summers was the first to suggest the crestal approach osteotomy technique for sinus floor elevation. The lateral window opening is a more invasive and extensive procedure compared with the osteotome technique. As a result, more complications can be expected in the former technique. In a recent study, Schwartz-Arad et al reported 44% membrane perforation in 81 sinuses operated on by the lateral window opening technique. They also found that surgical complications did not significantly influence the implant survival. On the other hand, the osteotome technique seems to be easier to perform, with the possibility of fewer surgical complications. The osteotome sinus-floor elevation was proposed for implant sites with at least 5 mm to 8 mm of bone between the alveolar crest and the maxillary sinus floor and mainly in soft or poor quality, as is often encountered in the posterior maxilla.

The objective of our study was to assess the safety and efficacy of minimally invasive sinus floor elevation followed by bone augmentation and implant fixation.

Materials and methods
This study presents the efficacy of using vertical bone condensing technique with bone grafting in 38 patients during maxillary sinus-floor elevation procedure. Patient age ranged from 30 to 63 years, with an average of 53.4 years. Patients presented good oral health and no active periodontal disease, and only 4 were smokers. A total of 57 screw titanium dental implants were placed. All patients needed sinus floor elevation (5 of them bilaterally) because overall lateral alveolar bone height was less than 8 mm (vertical bone height). Presurgical radiographic evaluation is used to determine the severity of ridge resorption (CT, panoramic, and periapical radiograms). The patients should receive a detailed explanation regarding the technique and sign an informed consent prior to the procedure. Forty-six implants were placed by a 1-stage procedure at the time of reconstructive surgery. Eleven implants required a 2-stage procedure (first stage: grafting; second stage: placement of the implants) because less than 4 mm of bone height at the most inferior point of the maxillary sinus was conserved, and the residual original bone of the alveolar crest was not adequate to obtain primary implant stability. In this latter technique, the sinus floor is grafted through a small canal or hole to build up enough bone (>5 mm) in the first stage to provide implant primary stabilization for the second stage. In the second stage, the same area is regrafted, if necessary, and simultaneously the implant is placed. Patients were instructed to wash the mouth with chlorhexidine 0.2% twice daily, continue antibiotic therapy for 7 days. Loading of implants was performed after a mean time of 4.4 months after insertion, consisting of 4.0 months after a staged procedure or 5.2 months after a simultaneous procedure.

Results
Clinical and radiological follow-up examinations were performed immediately after the surgery, 3 months later, and every 6 months thereafter for the next 5 years. Radiographical analysis was performed by single-tooth X-rays and panoramic radiographs. No clinical signs of sinus pathology were observed, and no patients showed any sign of maxillary sinusitis. The clinical parameters evaluated were bleeding on probing and probing depth. Six months after surgery, the radiograph analysis confirmed a postgrafting opacity of the maxillary sinus floor in all patients. Vertical peri-implant bone levels were studied, too, at different times at the mesial and distal aspect of each implant. The aim was to calculate the vertical bone levels or the distance in millimeters from the implant shoulder to the first crestal bone to implant contact and the vertical bone loss 5 years after functional loading. Marginal bone loss around the implants was within established limits.

Conclusions
Endosseous-implant placement using a bone-condensing-and-expansion technique is not new, and several studies have shown excellent bone response as well as implant survival using osteotomes for placement of dental implants in the maxilla. In a multicenter study, this technique has shown success rates as high as 96%. Osteotome sinus floor augmentation is a simple and conservative technique to increase the bone height on the sinus floor. The osteotome sinus-floor elevation technique increases new bone formation and leads to an enhanced osseointegration of dental implants in trabecular bone. The grafted area apical to the implant undergoes shrinkage and remodelling, the sinus floor boundary is eventually consolidated and replaced by newly formed cortical plate. Our clinical observations also showed no complications or patient discomfort. The soft sinus floor elevation technique represents a substantially less-invasive alternative for predictable implant installation in maxilla.

References
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Characteristic odour in the blood reveals ovarian carcinoma

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Abstract

Background
Ovarian carcinoma represents about 4% of all cancers diagnosed in women worldwide. Mortality rate is high, over 50%, mainly due to late diagnosis. Currently there are no acceptable screening techniques available, although ovarian cancer belongs to the group of malignancies for which mortality could be dramatically reduced by early diagnosis. In a recently published study, we clearly demonstrated that human ovarian carcinoma tissues can be characterized by a specific odour, detectable by a trained dog. Another recent study confirmed these results using an electronic nose.

Methods
In the present work, we examined whether the cancer-specific odour can also be found in the blood. Two specially trained dogs were used. Both ovarian cancer tissues and blood from patients with ovarian carcinoma were tested.

Results
The tissue tests showed sensitivity of 100% and specificity of 95%, while the blood tests showed sensitivity of 100% and specificity of 98%.

Conclusions
The present study strongly suggests that the characteristic odour emitted by ovarian cancer samples is also present in blood (plasma) taken from patients with the disease. This finding opens possibilities for future screening of healthy populations for early diagnosis of ovarian carcinoma. A future challenge is to develop a sensitive electronic nose for screening of ovarian carcinoma by testing the blood/plasma to detect the disease at a stage early enough for treatment to be effective.

Background
Worldwide, there are more than 204,000 new cases of ovarian cancer annually, accounting for around 4% of all cancers diagnosed in women. Incidence rates vary considerably, with the highest rates in the United States and Northern Europe and the lowest rates in Africa and Asia. Around 43,000 cases occur each year in Europe, and 22,000 in the USA. In Sweden, the disease represents 3.1% of all cancer cases in women, totaling about 900 cases per year. Despite this relatively low incidence rate, it is the fifth most common cause of cancer death in women. Because of the high mortality rates, ovarian cancer is one of several diseases that fulfill some of the criteria necessary for the introduction of population screening: it is an important

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