expressed positive of keratin-1 (K1/10; pair of keratins typically expressed by masticatory mucosa), while Terudermis specimens expressed positive of keratin-4 (K4/13; expressed by lining mucosa). The control group showed clear demarcation of K1 (keratinized mucosa) and K4 (Non-keratinized mucosa) expression.

Conclusions: Our study indicates that the epithelium of non-keratinized alveolar mucosa specifically expresses K4, while keratinized mucosa expresses K1. Both specimens augmented by Mucograft and Terudermis demonstrate similar cellular morphology and area stability. However, at the molecular level, only Mucograft specimen expresses positive of K1. Terudermis specimen expresses positive of K4. Additional investigations are necessary to identify the mechanism and clinical importance of different phenotype expressions of xenogenic collagen matrix augmented mucosa.

053. The effect of protrusion height on implant success following trans-alveolar sinus lifting approach

Author: Huang, Wei[1] | China

[1]Shanghai Ninth People's Hospital, Shanghai Jiao Tong University, Department of Oral Implantology, Shanghai, China

Objective: To evaluate the effect of protrusion height on implant success following trans-alveolar sinus lifting approach

Methods: Patients had single tooth missing with limited alveolar bone height (4-7mm) in posterior maxilla were enrolled in the study from July 2014 to July 2015. Patients were randomly divided into two groups according to the perforation height in sinus: group A with 1~3mm and group B with 3~5mm. Clinical with radiographic examination was used to measure the treatment outcome.

Results: A total of 37 Straumann implants were inserted into 37 patients (male: 23; female: 14; average age: 43.2±20.2 years old) with an average residual bone height of 6.1±1.1mm (4~7mm). Eighteen patients in group A had an average protrusion height of 2.3±1.2mm and 19 patients in group B with the height of 4.4±1.4mm. Two patients in group A and 3 patients in group B were detected sinus membrane perforation during surgery and 2 patients in groups B had mild nasal bleeding post-surgery. All implants achieved osseointegration and were restored with crowns. The implant success rate in the study was 100% during one-year follow-up.

Conclusion: With the limitation of the study, it might increase the risk of sinus membrane perforation to place implant with a protrusion height more than 3mm during trans-alveolar sinus lifting. However, no negative effect was detected on short-term implant success rate with this procedure.

054. Clinical and histologic evaluation of healing following tooth extraction with ridge preservation technique using a xenograft protocol in aesthetics sites

Author: Isola, Gaetano[1],[2] | Italy

Co-authors: Williams R.C.[3], Matarese G.[1], Cassandro F.[2], Ramaglia L.[2]

[1]University of Messina, School of Dentistry, Messina, Italy
[2]University of Naples 'Federico II', Section of Periodontology, Naples, Italy
[3]University of North Carolina at Chapel Hill, Department of Periodontology, Chapel Hill, United States

Objectives: Tooth extraction normally results in a significant reabsorption of the alveolar ridge with quantitative and qualitative changes of its profile that tends to decrease and results in the disappearance of bundle bone. To modify bone remodelling after extraction, especially in absence of the vestibular bone wall, various ridge preservation techniques have been proposed. The objective of this study was to evaluate and to compare changes of hard and soft tissues in post-extraction sockets and histologically quantify the alveolar ridge preservation after tooth extraction using a new surgical protocol.

Methods: Ten subjects who required tooth extraction and implant placement in an aesthetic site were enrolled in this study. All subjects presented, at the end of the tooth extraction, different level of defects in the buccal bone. The buccal wall was subsequently remodelled to create a standardized defect, 4 mm wide coronally, 2 mm wide apically, and

6 mm high. deproteinized bovine bone mineral (DBBM) xenograft granules were used to fill the defects. All surgical sites were subsequently covered vestibular by with a resorbable membrane composed of 90% anorganic bovine bone in combination with 10% porcine collagen fibers and, occlusal, with a resorbable 3D collagen matrix membrane and a non-submerged healing was obtained. Following 14 weeks of healing, clinical measurements as horizontal ridge width, vertical ridge changes and width of keratinized gingiva were recorded and a core biopsy was obtained and prepared for histologic evaluation of percentages of vital bone, residual graft, and soft tissues assessment in each patient.

Results: At 14 weeks, the mean horizontal ridge width at the buccal crest decreased from 8.2 ± 1.1 to 7.8 - 1.2 mm for a mean loss of 0.4 ± 0.8 mm (P>0.05) and the vertical change at the lingual sites was 0.5 mm respect to baseline; the keratinized gingiva showed a coronal shift of 1.2 mm. In addition, only 14% of sites required an additional bone augmentation at implant placement. The biopsies harvested from the grafted sites revealed the presence of trabecular bone, which was highly mineralized and well structured. Particles of the grafted material could be identified in 71% of the samples in the treated subjects and the bone formed in the sites was also well structured with a minor percentage of mineralized bone. The amount of connective tissue was significantly higher.

Conclusions: The use of xenograft particles concomitantly with the application of two different collagen membranes used for the vertical ridge preservation approach immediately after tooth extraction contributed to the preservation of the alveolar process. Furthermore, the histologic analysis showed that the porcine-derived xenograft particles were not resorbed but became surrounded by new bone and that was present a significantly higher percentage of trabecular bone and total mineralized tissue in ridge-preservation sites 14 weeks after tooth removal.

055. Anatomy and morphology of the nasopalatine canal: A CBCT study

Author: Jen, Hsin-Ju[1] | Taiwan, Republic of China

Co-authors: Fu P.-S.[1], Hung C.-C.[1],[2], Wu Y.-M.[1],[2]

[1]Kaohsiung Medical University Hospital, Department of Dentistry, Kaohsiung, Taiwan, Republic of China
[2]Kaohsiung Medical University, School of Dentistry, Colledge of Dental Medicine, Kaohsiung, Taiwan, Republic of China

Purpose: To analyze the dimensions and anatomic characteristics of the nasopalatine canal and the corresponding buccal bone plate by application of CBCT imaging.

Methods: The study population was comprised of 24 men and 31 women with a mean age of 56.2 years. CBCT was performed using a standard exposure and patient positioning protocol. The data of the CBCT images were sliced in three dimensions. The shape of the nasopalatine canal in coronal view and number of foramen of Stenson were assessed. The anatomical variants were morphologically classified as follows: A (single canal), B (double canal), or C (Y-shaped canal with one or more foramens of Stenson). In addition,the dimensions of buccal bone wall,canal length,canal diameter at the palatal,middle and nasal levels in cross-sectional images were measured. The correlation of age,gender and status of central incisors (both present, one missing, and both missing) with all the variables was evaluated.

Results: The anatomy of the nasopalatine canal showed significant variability in morphology and dimensions. Type A was observed in 20 patients (36.4%), type B in 1(1.8%), and type C in 34(61.8%). The mean diameter of the nasal opening was 3.67 ±1.81 mm and 3.77 ± 1.18 mm in the case of the oral opening. The mean length of the canal was 12.08 ±3.20 mm. Results showed that gender of the included patients had a statistically significant influence on the dimensions of the buccal bone plate and length of nasopalatine canal,the mean values being generally higher for male subjects. In addition,the dimensions of buccal bone plate and diameter of incisive foramen were influenced by the status of central incisor.

Conclusion: The present study highlighted important variability observed in the anatomy and morphology of the nasopalatine canal. Gender and status of central incisors influenced anatomy characteristics in the pre-maxilla region. Given the diversities in the size and shape of nasopalatine canal, we recommend CBCT presurgical evaluation to optimize surgical planning and avoid complications.