

**12239 E-POSTER
CLINICAL INNOVATIONS****New technique for alveolar preservation – the anodized titanium foil concept**

Danilo Maeda; Sérgio Souza; Fábio Mizutani; Danilo Ciotti

USP, Brazil

Background: The socket preservation techniques are used to minimize bone loss and maintain gingival tissues volume after tooth extraction. However, the volume preservation rate of the alveolar process is not predictable, and most of the guided bone regeneration techniques change the mucogingival line by coronally positioning the flap to cover a membrane, what may impair implant aesthetics and function.

Aim/Hypothesis: The aim of this clinical prospective study was to evaluate a new alveolar preservation technique using an anodized titanium membrane (ATM), which remain exposed to the oral cavity, analyzing tomographical bone measurements pre-surgically and 6 months after surgery.

Material and Methods: Eighteen healthy patients having one hopeless tooth were selected to receive the new socket preservation technique. The teeth were carefully extracted, then a small flap was raised to allow the ATM insertion. The alveolus was filled with anorganic bovine bone graft and the ATM was trimmed and adapted over the crestal bone and below the gingival margin. Nylon sutures were used to hold the ATM in position. Proper post-operative medications were prescribed (Amoxicilin 500 mg, Ibuprofen 200 mg and PerioGard rinse). Fifteen days after surgery the ATMs were removed with pliers. The measurements of the alveolus thickness were recorded in the baseline and 6 months after the surgeries, using cone beam tomographies, evaluating the distance between buccal and palatal bone plates, and were performed in the center of the alveolus, 1 mm above the palatal crestal bone. The data was statistically analyzed by Student's *t*-test ($P < 0.05$ was considered).

Results: The results are presented in percentage, to minimize the influence of the different alveolus sizes. After 6 months, the mean volume maintenance was 97.66% ($P = 0.07$) for all the 18 patients. In cases with vestibular bone plate loss (7 patients), the average of volume maintenance was 112.89%, with some volume gain ($P = 0.07$). When there was no vestibular bone plate loss (11 cases) the result was 87.97% ($P = 0.002$). Evaluation the type of teeth, for molar teeth (7 cases), mean volume maintenance was 89.55% ($P = 0.014$), and for no molar teeth (11 cases), the average of volume maintenance was 102.82% ($P = 0.46$).

Conclusions and Clinical Implications: The use of ATM in this prospective case series presented superior tomographic results for tissue volume maintenance after 6 months, when compared to the scientific literature addressing GBR procedures using collagen membranes and connective tissue grafts. Future randomized controlled clinical studies are suggested to investigate the regenerative potential of this new alveolar preservation technique.