WILEY CLINICAL ORAL IMPLANTS RESEARCH

SU-001 POSTER WITH ORAL PRESENTATION IN IMPLANT THERAPY OUTCOMES, SURGICAL ASPECTS

Comparative evaluation of Lateral approach versus Minimally invasive transcrestal sinus augmentation (MITSA)

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Background: There are different techniques for sinus augmentation, Lateral antrostomy done typically, in the advanced resorption of the maxillary posterior ridges while transcrestal sinus augmentation is used when minimal bone augmentation is anticipated and generally accompanied with simultaneous implant placement. Today with novel drilling system and innovative graft delivery system, crestal approach gives promising success in achieving significant elevation of the sinus floor while sparing the need for more invasive direct sinus augmentation approaches.

Aim/Hypothesis: The aim of the study was to compare the efficiency of minimally invasive transcrestal sinus augmentation (MITSA) utilizing hydraulic sinus elevation with the conventional sinus augmentation in maxillary posterior ridges.

Material and Methods: In this prospective longitudinal interventional comparative study the patients were divided into two groups namely Group A which corresponded to lateral antrostomy while Group B to MITSA. 40 patients with no more than 2–5 mm of residual bone height were included and equally distributed amongst the groups. In group A after sinus augmentation patient was recalled after 6 months for implant placement. Group B patients were subjected to crestal sinus elevation using special reamer drills to breach the sinus floor. After the sinus floor is breached by the 3.2 mm S-reamer leaving the membrane intact, the bone substitute was directly injected into the prepared sinus cavity via the cartridge delivery system. The cartridge tip fitted tightly in the osteotomy and allowed the insertion pressure due to injection of the graft to be delivered directly to the breached inferior border of the sinus floor. The hydrostatic pressure exerted by the putty resulted in an atraumatic elevation of the sinus membrane. An appropriately sized implant was placed simultaneously. Prosthesis was delivered 4–6 months after implant placement in either group.

Results: The residual bone height to the gained bone height at the time of sinus lift and 6 months post operatively were compared for both the groups. In group A patients, the mean pre-operative bone height was 3.02 ± 1.35 mm, post-graft bone height immediately after the augmentation was 15.18 ± 2.52 mm and post-operative bone height after 6 months healing was 14.79 ± 2.30 mm. In group B residual bone height was 3.14 ± 1.05 mm. A total gain in bone height recorded at the end of 6 months was 8.59 ± 1.06 mm. The mean crestal bone loss around the implants at the end of 6 months was 0.71 ± 0.26 mm. The success rates of the implants placed in both the groups were 100%. The patient satisfaction amongst both the groups revealed that Group A were finding the surgery more traumatic and dissatisfied with longer timeline of procedure compared to group B.

Conclusions and Clinical Implications: This comparative study states that the results achieved with MITSA are on par with conventional lateral approach technique with a better patient satisfaction giving faster results. Thus, MITSA could be a superior alternative to the conventional lateral approach in augmentation of highly resorbed sub-sinus spaces.