

# **Influence of Flap Design on Peri-implant Interproximal Crestal Bone Loss Around Implants Placed Simultaneous With Localized Maxillary Ridge Expansion**

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## **Abstract**

**Background:** The placement of implants in edentulous areas is often compromised by a thin alveolar crest; this offers advantages from aesthetic, biomechanical, and functional points of view. The clinician should use surgical techniques that prevent esthetic complications. Thus the aim of this study was to determine to what extent the surgical flap design used during implant placement simultaneous with localized maxillary expansion influences peri-implant interproximal crestal bone loss.

**Patients and methods:** A total of 10 patients were included in this study of both sexes with age ranging from 35 to 55 years and equally divided in two groups according to the surgical flap protocol. Radiographic assessment was recorded at 1, 3 and 6 months calculated from the day of expansion and implant placement as in group A and group B the measurements of the crestal bone level were evaluated by distance implant-shoulder to the bone (DIB) for both groups.

**Results:** All implants successfully osseointegrated and no implant was removed when the abutment was connected or before or during follow-up. The flapless group showed more superior properties over the conventional flap group as regards the colour, mucosal thickness and texture around the implant which was reflected on the overall appearance of the tissues surrounding the implants. The mean of DIB was (1.6mm) for group A and was (1.9mm) for group B at the end of 6 months follow up period.

**Conclusion:** flapless implant placement simultaneous with bone expansion serve as an innovative technique that offers an atraumatic alternative to the traditional use of osteotomes and the technique was relatively simple as well as the incidence of postoperative bone loss was limited than flap approach.

**Keywords:** flap design, ridge expansion, bone loss.

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