Crestal bone stability around implants with horizontally matching connection after soft tissue thickening: a prospective clinical trial

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It has been shown that thin mucosal tissues may be an important factor in crestal bone loss etiology. Thus, it is possible that mucosal tissue thickening with allogenic membrane might reduce crestal bone loss. The purpose of this study was to evaluate how implants with a traditional connection maintain crestal bone level after soft tissue thickening with allogenic membrane.

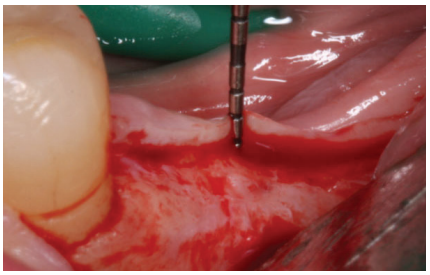

Fig 1. Vertical measurement of thin mucosal tissues before implant placement (2mm or less).

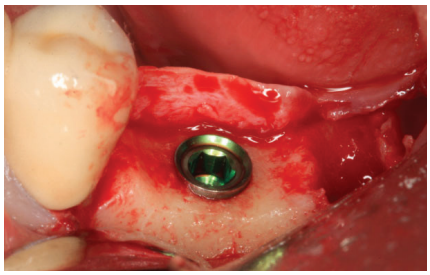

Fig 2. Supracrestal positioning of implant approximately 0.5 to 1 mm above bone crest.

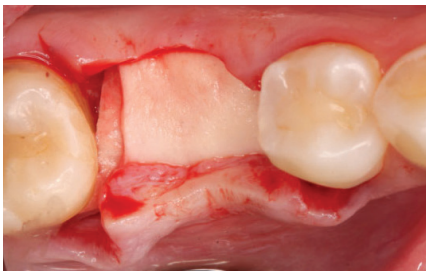

Fig 3. Implant placement site covered with AlloDerm™ Regenerative Tissue Matrix (RTM).

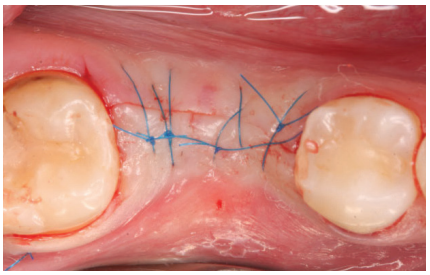

Fig 4. Sutured without tension full-thickness flap.

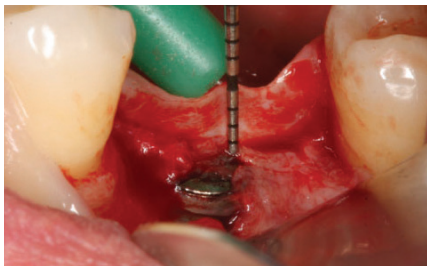

Fig 5. After 2 months of healing, measurement of increased soft tissue thickness after augmentation with allograft (Group B).

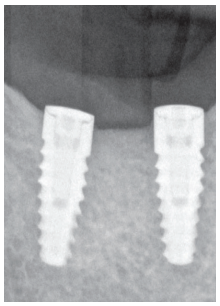

Fig 6. Crestal bone levels after implant placement in thickened soft tissue group.

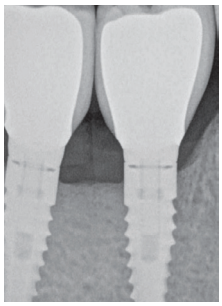

Fig 7. Crestal bone levels after 1-year follow-up in thickened soft tissue group.

Methods & Materials

- 103 patients received 4.6mm diameter internal hex implants
- According to gingival thickness, patients were assigned to 3 groups:
  - **Group A*** = thin tissue
  - **Group B** = thin tissue, thickened with AlloDerm™ RTM
  - **Group C*** = thick tissue
  - *one-stage approach

Results: one year follow-up

	M	D
Group A	1.65mm	1.81mm
Group B	0.31mm	0.34mm
Group C	0.44mm	0.47mm

Crestal Bone Loss (mm)

Conclusions

It can be concluded that thin mucosal tissues may cause early crestal bone loss, but their thickening with allogenic membrane may significantly reduce bone resorption. Implants in naturally thick soft tissues experienced minor bone remodeling.

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