

Does Thickening Of The Mucosa Avoid The Initial Bone Resorption Around Implants?

A Clinical, Prospective, Randomized, Controlled Trial

Objectives

In surgery we are often confronted with very thin soft tissue, especially in the lower molar region. Due to the rules of the biological width, this leads inevitably to bone resorption around an implant after its insertion.

Aim of the study was to test whether the initial marginal bone resorption around an implant can be reduced or avoided by thickening the mucosa.

Materials and methods

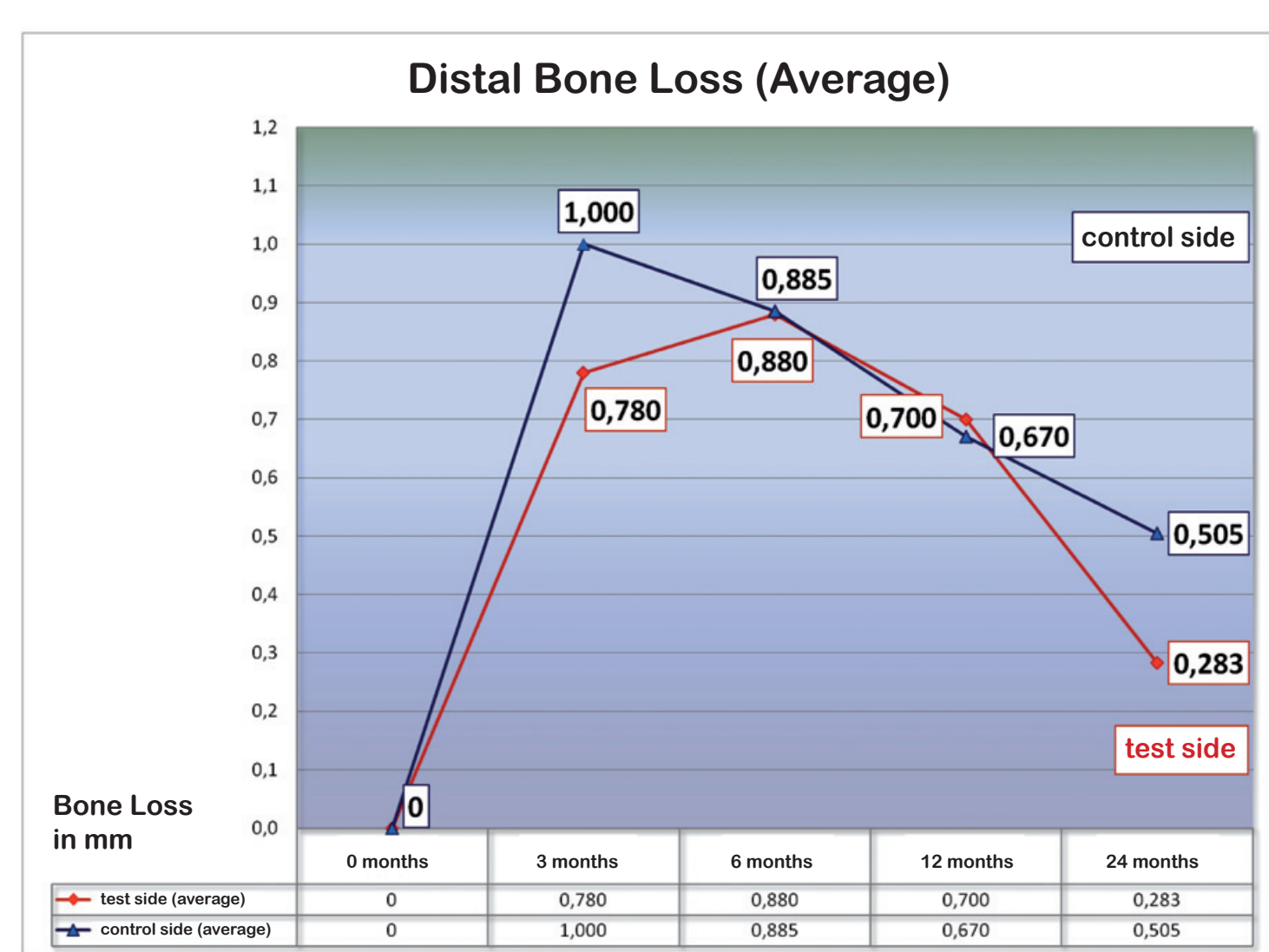
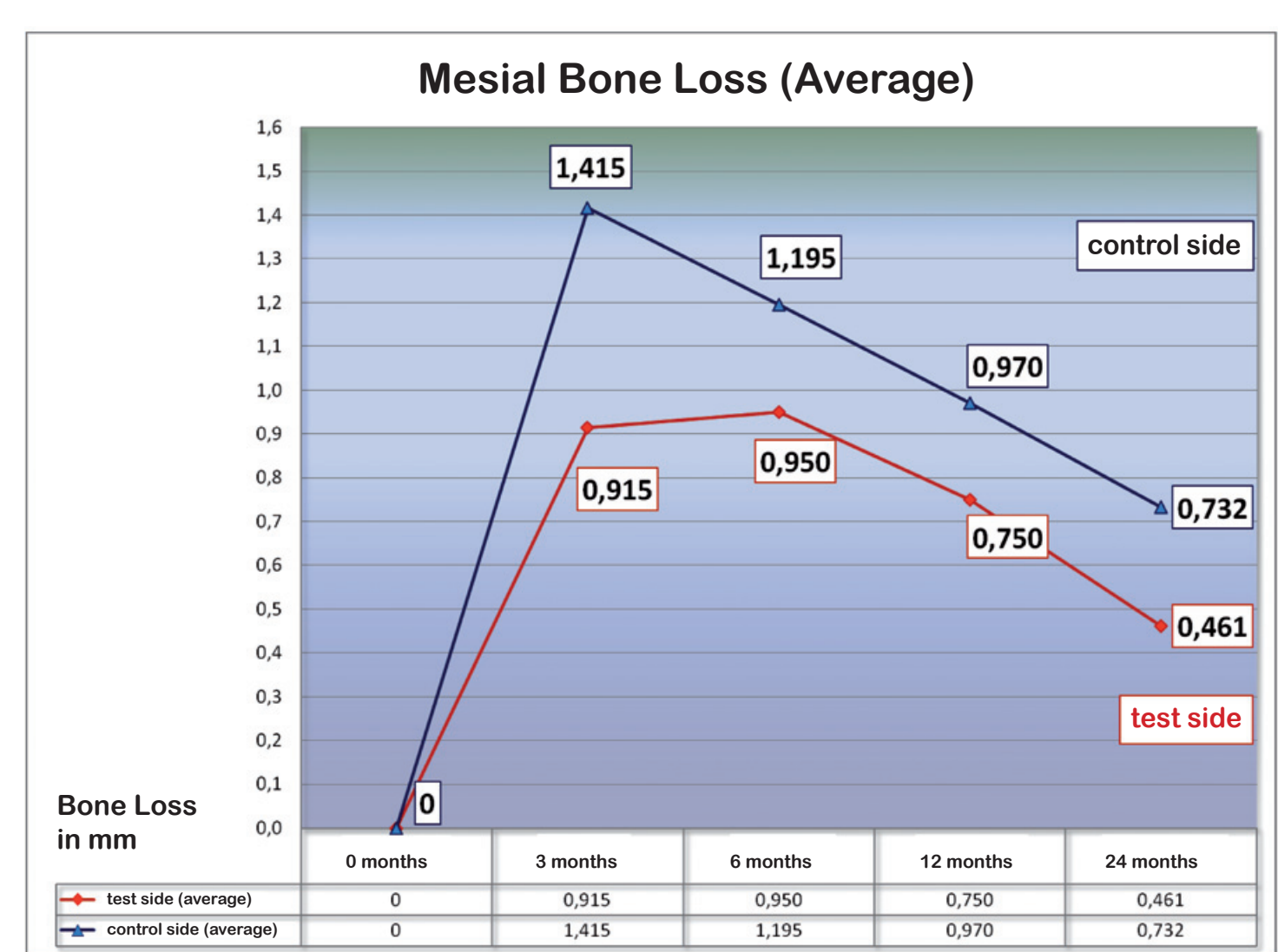
In a split mouth design study including 20 patients, two Camlog® Screw Line Promote® Plus implants were bilaterally inserted in a submerged healing to replace the lower first molar. The control and the test side were established by randomization.

On the control side the implant treatment was realized by means of a conventional protocol. On the test side the mucosa was thickened by a subepithelial connective tissue graft.

Postoperative clinical monitoring took place after 3, 6, 12 and 24 months. Apart from x-ray controls, the thickness of the mucosa was measured by puncture with a spreader. Additionally the pink esthetic score (PES) by Fuerhauser was applied to evaluate the red esthetic.

Results

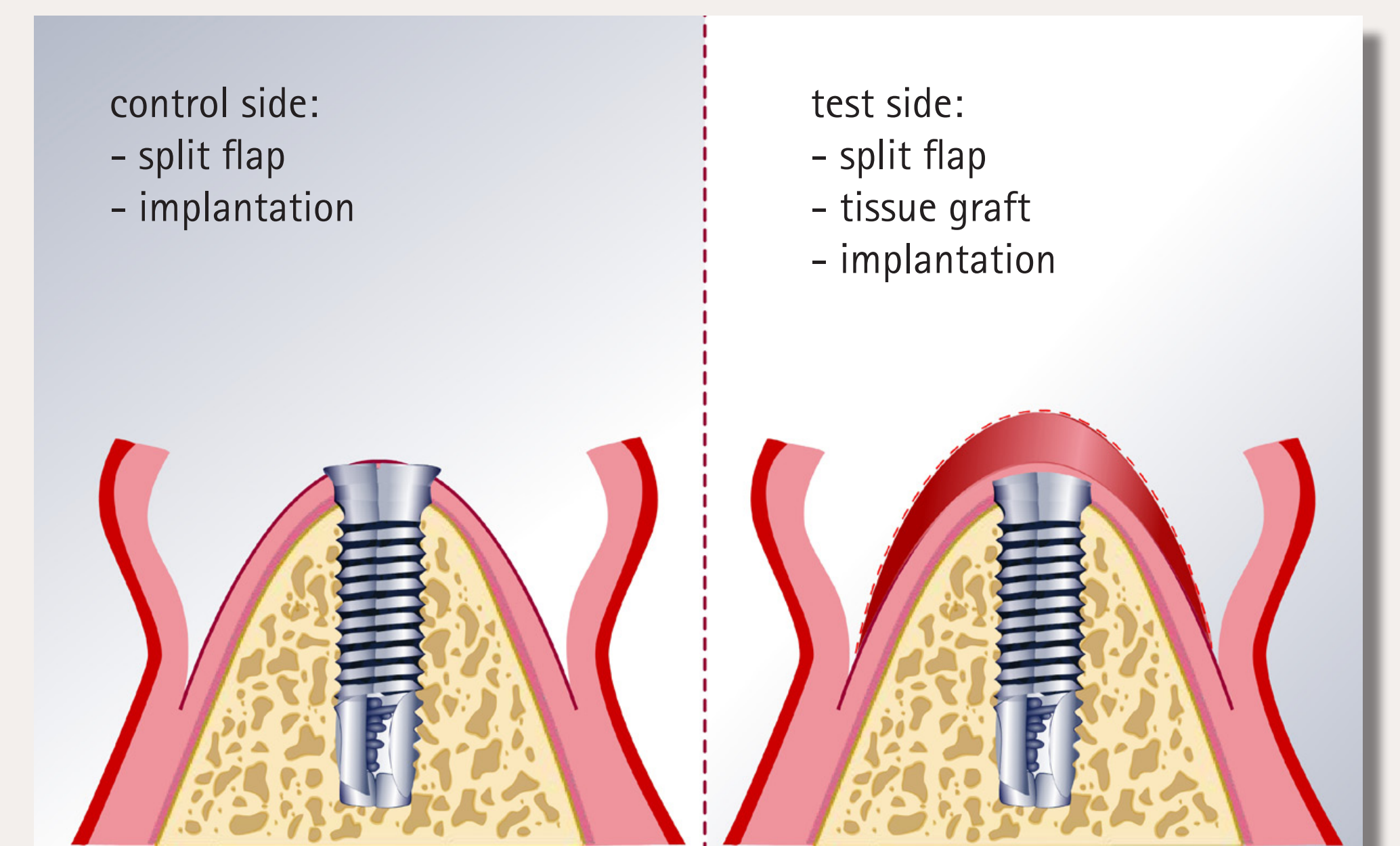
1. Dimension of bone loss at mesial side of the implant: On the control side as well as on the test side a statistically significant bone loss was measured during the first three month after surgery. Within the course of monitoring a maximal reduction of up to 50% could be shown.
2. Dimension of bone loss at distal side of the implant: Though the bone loss on the test side was less compared to the control side, no statistical significance could be shown. The measurements revealed a maximal reduction of up to 50 %.



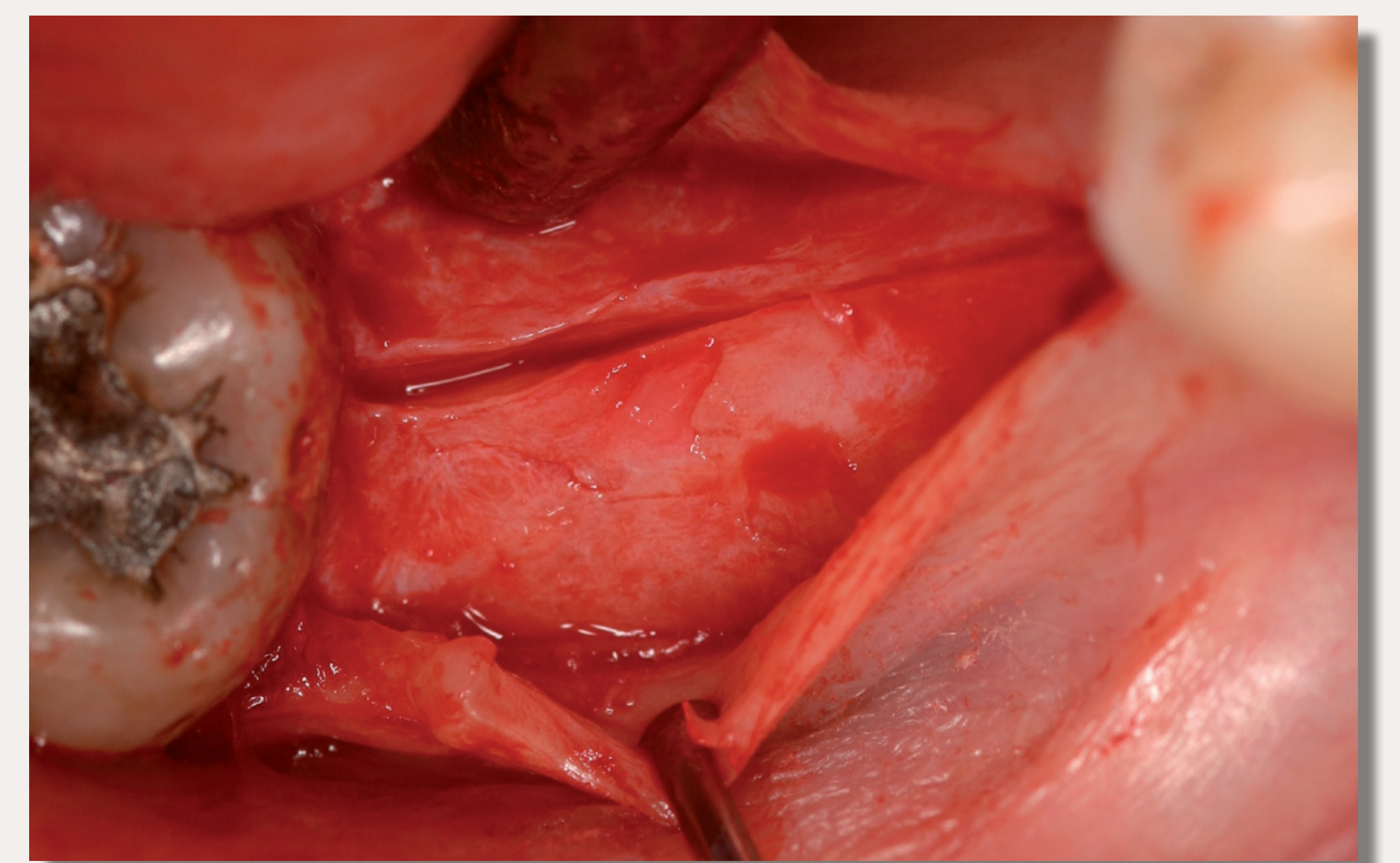
3. Twelve month after surgery the test side revealed a 63% thicker soft tissue compared to the initial state.
4. The average values of the PES-index by Fuerhauser were significantly higher on the test side than on the control side.

Conclusion

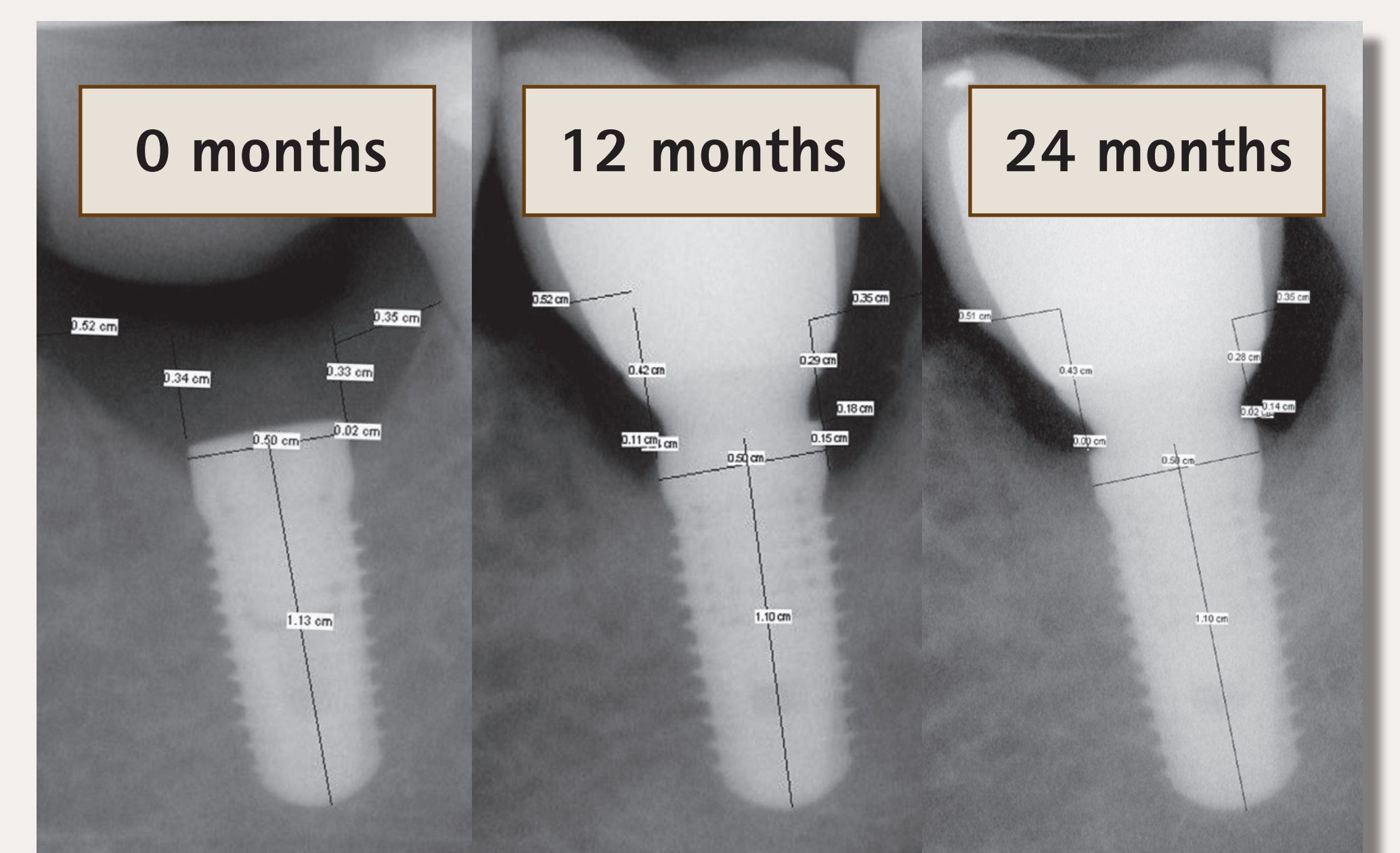
1. There is only a tendency, but no statistically significant result, that the initial, peri-implant bone loss is reduced by thickening the mucosa.
2. After the initial bone loss a substantial regeneration of the peri-implant bone takes place.
3. The thickening of the soft tissue remains permanently stabile.
4. Accordingly high esthetical results can be achieved with this method, which is of high interest for implantation in the anterior region.



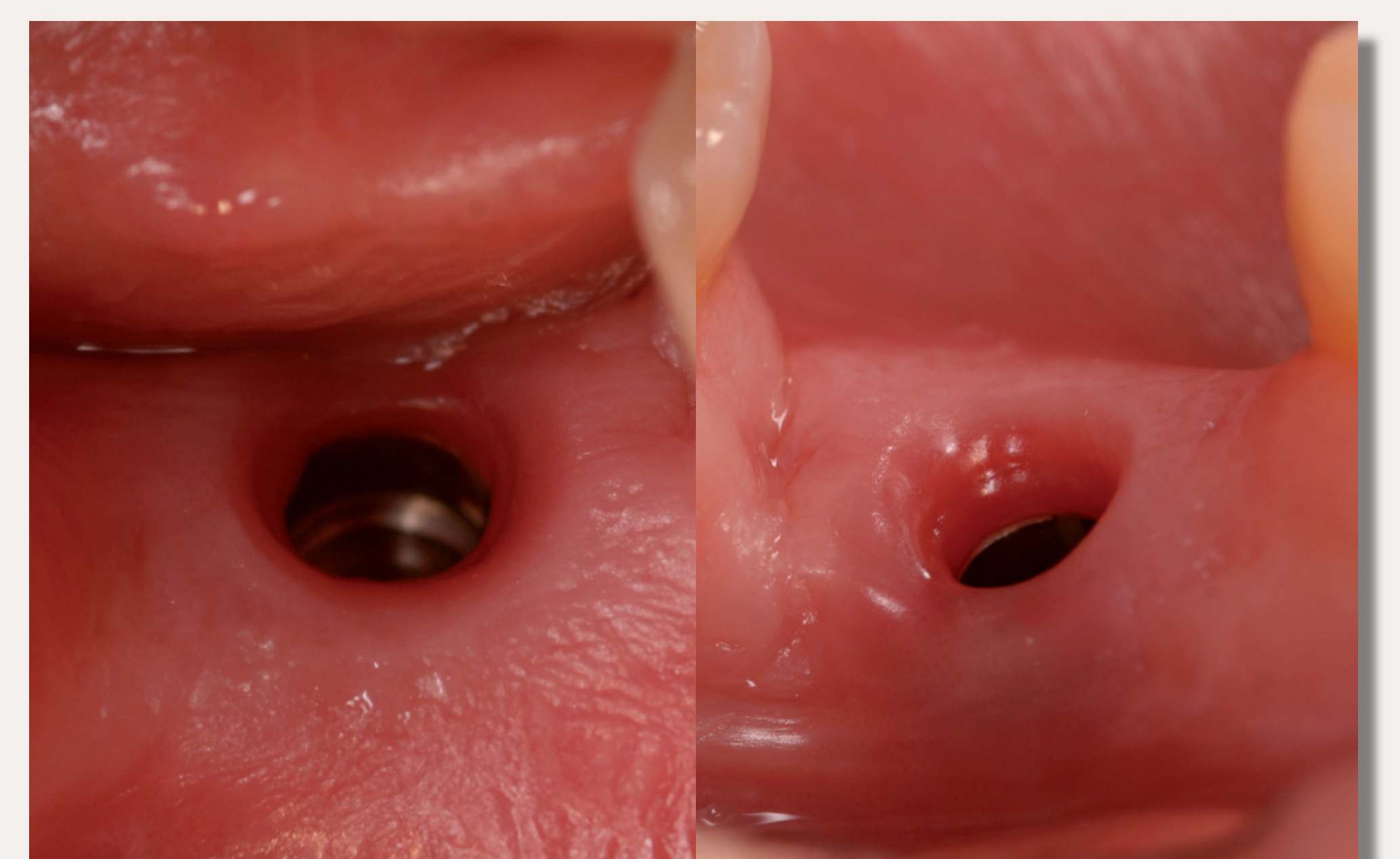
Scheme of surgical technique



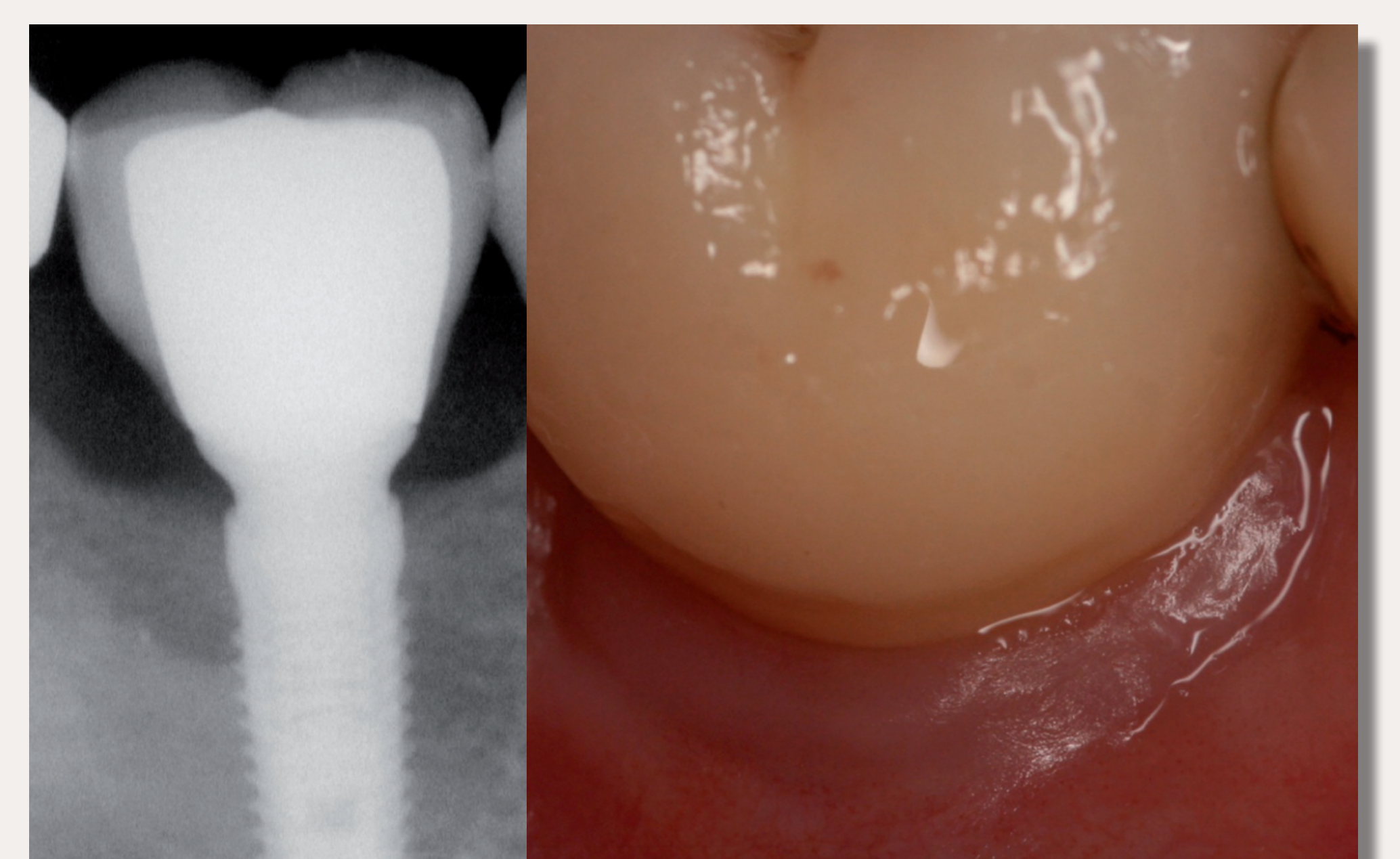
Crestral incision and preparation of the split flap



Peri-implant bone level at point of implantation, after 12 and 24 months



Emergence profile on control side (left) and test side (right)



Clinical outcome after 24 months