



Palatal stent with interproximal retention after free gingival graft harvesting.

Full palatal stent with mechanical interproximal retention, no sutures or haemostatic agent used on donor site.

“Elemental’s bacteriostatic polymer is easy to apply, enabling instant chairside creation of a palatal stent to decrease post-operative pain, stabilise the blood clot and create favorable healing conditions, especially in the first 3-4 days after surgery, and without having to using a haemostatic agent or suturing on the donor site. The full arch interproximal retention is stable, doesn’t interfere with occlusion and is hardly visible on the outside.”

Creating the stent

- Heat the granulate in a glass or stainless steel bowl of boiling water or hot sterile saline. (fig. 1) Briefly stir the granulate until the material clumps together (fig. 2-3)
- Using latex gloves, take the soft polymer out of the water and press it into a thinner layer. (fig. 4-5)
- When in a soft moldable state, the granulate might stick to nitrile gloves and plastic cups. If nitrile gloves are used, applying some vaseline to the gloves will help prevent the granulate from sticking to the gloves.



Fig. 1



Fig. 2



Fig. 3



Fig. 4 - after heating, the polymer becomes soft and easy to manipulate



Fig. 5

- Apply the soft polymer onto the palate. With gentle tactile pressure, press the polymer onto the palate, making it adapt to the anatomy of the palate, and into the interproximal spaces to create retention. Full coverage of the palate contributes to optimal, stable retention. (fig. 6-12)
- The polymer will set *in-situ* into a rigid material in approximately 1 minute. Don't remove the polymer when it's still soft.
- If you're not pleased with the outcome of the polymer after setting, it can be placed back into hot water / hot sterile saline. The material will become soft and remoldable again.
- Leave the stent aside to harden completely, while continuing with the surgery.



Fig. 6



Fig. 7



Fig. 8



Fig. 9 - example 1 of full palatal stent with interproximal retention



Fig. 10 - example 2 of full palatal stent with interproximal retention



Fig. 11 - the polymer adapts to the anatomy of the palate



Fig. 12 - the polymer adapts to the anatomy of the palate

Free Gingival Graft

- Perform adequate local anaesthesia and prepare the recipient site. (fig. 13)
- A thorough cleaning and plaque removal is performed. (fig. 14)
- Before starting with harvesting the graft on the palate, briefly insert the stent to control the fit again, now that the stent has fully hardened. (fig. 15)
- If corrections are necessary, trim the stent with scissors or a scalpel. Optionally, reheating the stent in lukewarm water can help to trim or soften the edges. (fig. 16-17)



Fig. 13

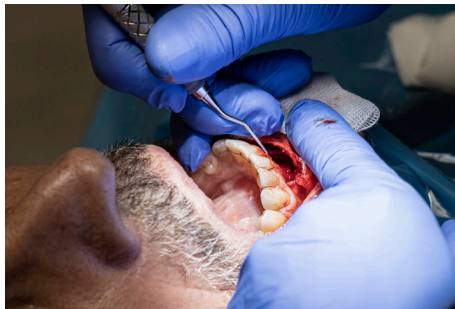


Fig. 14



Fig. 15



Fig. 16



Fig. 17

Harvesting the graft

- Measure the required proportion of the graft and indicate the outline of the graft with 4 puncture points. (fig. 18-19)



Fig. 18

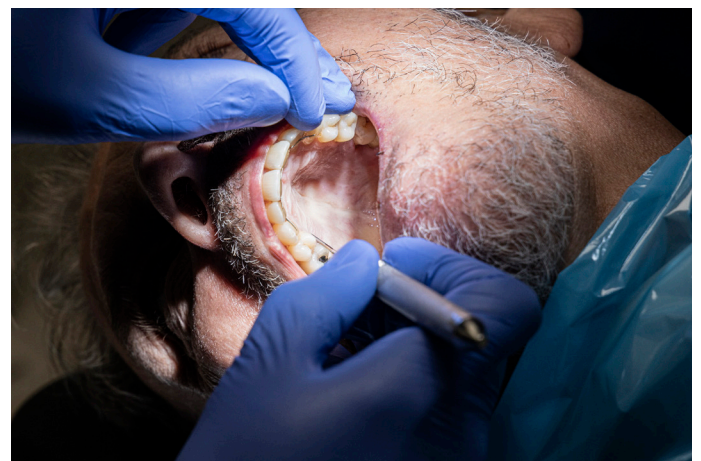


Fig. 19

- Outline: Perpendicular to the surface, two sets of 2 parallel incisions are performed according the previous performed indication points. Attention should be given to overlap these cuts and to maintain a constant depth.
- Undercut: One single incision with an angulation of 30° over one of the long dimension of the outline will start undermining the surface.
- Undermining: Blade flattens, to same axis as surface. Thereafter the blade is rotated even further to be almost parallel to the tissue surface and moved gradually towards the other outline measure. (fig. 20-22)



Fig. 20



Fig. 21

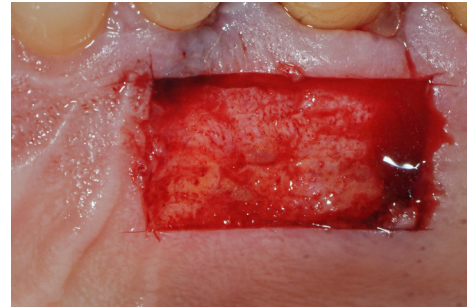


Fig. 22

- Ideally, the graft is harvested uniformly enough so that it can be placed on the recipient site immediately. A thin and uniform graft will limit the amount of bleeding.
- If necessary, modify the graft to obtain a uniform, homogeneous thickness by removing fatty and glandular tissue remnants with a scalpel. This is crucial for vascularization. Be careful not to overwork and to perforate the graft.
- Apply the harvested tissue to the prepared recipient bed. Close surface contact between the graft and the recipient bed is crucial for vascularization, hence the importance of homogeneous thickness of the graft. (fig. 23)
- Fixate the graft with adequate suturing. (fig. 24)
- The donor site remains uncovered during the recipient site surgery and the initial blood clot is being formed. (fig. 25)



Fig. 23

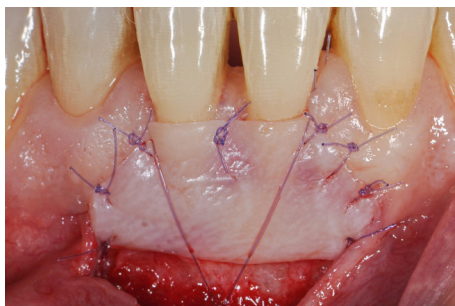


Fig. 24



Fig. 25

Placing the stent

- Applying a haemostatic agent and suturing the donor site is not necessary: the stent stabilises the blood clot and creates favourable conditions for healing, especially in the first 3 to 4 days after surgery.
- When the surgical work is completed, place the stent. It should 'click' in place with stable mechanical retention.

Patient instructions

- Instruct the patient to wear the stent for 7 days, as much as possible (day & night).
- Explaining the stents purpose to decrease post-operative pain & irritation of the palatal wound and encourage optimal healing is recommended to increase patient adherence.
- A chlorhexidine rinse is prescribed for the recipient site. When rinsing, the stent may be removed shortly.
- Patients are prescribed adequate analgesics in the first 2 days after surgery. From day 3, analgesic intake can be decreased.

Clinical endpoints

- The palatal stent will protect the blood clot and create favorable conditions for optimal healing, especially in the critical first days after surgery.
- The bacteriostatic mechanical protection will strongly decrease post-operative pain, prevent wound irritation & discomfort and prevent disturbance by eating, drinking, tongue movement.



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