



F-SPLINT-AID SLIM from POLYDENTIA SA

PRE-IMPEGNATED FIBERGLASS RIBBON IN PERIODONTICS

Summary

F-Splint-Aid Slim is a fiberglass ribbon, pre-impregnated with an adhesive agent. The **new, slim version (only 2 mm wide)** guarantees the same degree of cohesiveness, although it was designed for the treatment of **small areas**. The first of its kind in the world – packaged in a **resealable bottle** – with the following benefits:

- **Ready for use:** only a few steps for an excellent result;
- **Extremely aesthetic:** splinting of a similar colour to the natural teeth;
- **Top-quality material:** the fiberglass ribbon ensures excellent durability;
- **Unique packaging:** dark plastic bottle (protects against light), simple to open and close, no waste of material, very long expiry date;
- **Cost-effective:** reasonable price for an extremely innovative product!

CLINICAL CASE: F-SPLINT-AID SLIM – APPLICATION IN PERIODONTICS

Courtesy of Dr. med. dent. Martin Hagner, Centre for Dentistry, Bonn/Germany

Introduction to teeth splinting following corrective surgical periodontal treatment

In periodontics, dentists are frequently faced with borderline situations in conservative dentistry. Frequently successful anti-infective periodontal therapy needs subsequently periodontal surgery. Their benefits were demonstrated by *Ramfjord et al. (1987)* at teeth with remaining pocket depths of ≥ 7 mm.

In particular, molars affected by furcation display a poorer response to anti-infective therapy, as demonstrated by *Nordland et al. (1987)*. For that reason, surgical treatment is frequently performed – simply to improve the removal of concretions (*Matia et al. 1986*).

However, not all furcation defects can be treated with regenerative therapy.

For instance, in the upper jaw, there are habitually limitations in the molar area in cases of furcation degree II and above (*Jepsen et al. 2002*). Therefore root amputation is recommended for furcation degree III in upper jaw molars (*Hamp et al. 1975; Langer et al. 1981; Green 1986; Bühler 1988; Blomlöf et al. 1997; Basten et al. 1996; Carnevale et al. 1996, Park et al. 2009*).

This implicates removing one or two of the tooth's periodontally weakest roots. As a result, the mobility of the remaining tooth increased with reduced numbers of roots.

Tooth splinting is a good method of countering this increased tooth mobility (*Galler et al. 1979*).

Although *Kegel et al. 1979* could not demonstrate that tooth splinting had an effect on the subsequent entire tooth mobility, it was confirmed by *Fleszar et al. 1980* that there was no attachment gain in cases with existing teeth mobility whereas existing pockets persist in spite of periodontal therapy.

This also resulted in the conclusion reached by *Rampfjford & Ash 1981* that teeth with occlusal overload should be adjusted either by grinding, splinting or by orthodontic treatment.

In this case report, it was possible to avoid tooth replacement by means of root amputation and tooth splinting. Aside from the financial benefit for the patient, there is also the clinical benefit to the prognosis of the remaining dentition (*Lang & Tonetti 2003; Pretzel et al. 2008*).

The clinical case

Here, tooth-splinting procedure is demonstrated on tooth 26 which was root amputated during resective surgicaltherapy in a patient with generalised severe chronic periodontitis and type II diabetes.

The first x-ray of the teeth shows the situation after anti-infective therapy and prior to endontic treatment. The diagnosis was primary periodontal lesion with secondary endodontic involvement, with furcation defect degree III, which could be probed distally and vestibulary

The second x-ray of the teeth shows the x-ray examination under a rubber dam during the endodontic treatment of tooth 26.

The third x-ray shows tooth 26 with the completed filling of the mesiovestibular and palatinal root canal. The distovestibular root canal contains a medicinal insert in form of calcium hydroxide. The pulp chamber and the upper part of the root canal are filled with a composite material, which also forms the cover filling.



X-ray images 1-3 (from left to right)



X-ray images 4-5 (from left to right)

The fourth x-ray image shows tooth 26 after root resection of the distal and palatinal root. During surgery it was displayed that the grade III furcation continued through the mesiopalatinal area., The palatinal root could no longer be preserved.

The fifth x-ray image shows tooth 26 splinted with F-Splint-Aid Slim at teeth 25 and 27.

The clinical photo sequence shows the tooth splint procedure with the F-Splint-Aid Slim System, using the direct adhesive technique.

Figure 1:



Excavated situation of teeth 25-27 under rubber dam, with sectional matrix applied mesially at tooth 25.

Figure 2:



Palatinal view of the excavated situation of teeth 25-27.

Figure 3:



Total etch procedure of the excavated situation with blue etch gel.

Figure 4:



Conditioned cavities of teeth 25-27 with bonding.

Figure 5:



Built-up mesial ridge of tooth 25 after removal of the sectional matrix as well as underfilling with flow composite at tooth 27.

Figure 5b:



F-Splint-Aid Slim strip is pulled out from the light-protected storage bottle using tweezers.

Figure 6:



Length-adaptable fiberglass ribbon F-Splint-Aid Slim with application clasp between teeth 26 and 27.

Figure 7:



F-Splint-Aid Slim fiberglass ribbon is fixed with flow-composite in cavities of teeth 25-27.

Figure 8:



Completed composite restoration of teeth 25-27 with integrated fiberglass splinting.

Figure 9:



Palatal view of the restored teeth after splinting with F-Splint-Aid Slim.

Figure 10:



Occlusal view of the tooth splinting after removal of the rubber dam.

Figure 11:



Contact points of the restored teeth marked by blue paper. Tooth 26 with reduced numbers of roots was designed with a reduced orovestibular width with subsequent static contact on the buccal triangular tubers to prevent shearing forces.

Figure 12:



Palatal view of the completed restorations.

Figure 13:



Buccal view after tooth splinting in intercuspitation.

Conclusion

I regard the special benefit of the F-Splint-Aid Slim to be the stable, woven structure of the splint material and its practical availability in the light-protected storage bottle. The "Clip&Splint" plastic clasps provided for fixing the splint material to the teeth represent a further advantage.