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Clinical Bulletin

J. LA&HA, Vol. 2013, No. 1; p. CB04.

X-Runner™ - A Perfect Tool for Treating Amelogenesis Imperfecta

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Parameters:

Laser source:	Er:YAG, 2940 nm
Pulse duration:	MSP
Fluence:	250 mJ
Frequency:	10 Hz
Handpiece:	X-Runner
Treatment shape and size:	Circle, 3.5 mm
Beam passages:	15

Treatment procedure:

In young people, discoloration of the front teeth may be caused by a hereditary disorder known as amelogenesis imperfecta, which primarily affects the composition, quantity and structure of the enamel. Since classical dental bleaching in most cases can't be used, minimally invasive dental techniques are the treatment of choice. The Er:YAG laser has already proved to be very effective in treating this type of lesion, but with the X-Runner™ handpiece we can achieve even further gains in speed and precision, which are very important in minimizing the damage of healthy enamel.

An 18-year-old patient with a diagnosis of amelogenesis imperfecta came to our clinic. Enamel lesions were observed in the right upper lateral incisor, canine and the first premolar. The decision was made to ablate the affected zones and fill the cavities with composite resins. The procedure was conducted using a LightWalker Er:YAG laser with the X-Runner handpiece. We programmed the extent and the depth of the zone in advance, setting the ablation area as a circle with a 3.5 mm diameter and the number of passes to 15. Since the patient felt no pain, anesthesia was not used. The total laser irradiation time was 3 minutes. The energy for the final passage was set to 80 mJ and SSP mode to create the optimal surface for good adhesion of composite resin, without acid etching.

With the use of X-Runner we were able to cover a large surface area in a short time without the need for repetitive and tiring hand movements. The handpiece was easy to control and automation technology effectively helped to guide the laser light swiftly and accurately across the surface of the treated tissue. Because the depth of ablation was pre-set with the number of passages, we were able to remove only the discolored enamel surface and minimize damage to the surrounding healthy tissue. The patient was very satisfied with the treatment and left the clinic with no pain and a new healthy smile.



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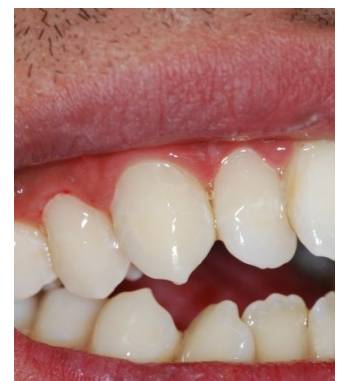
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Before the treatment



After X-Runner™ preparation



After the treatment