



Orthodontic Composite Splint Removal

Dr. Terry Rose, BSc., BDS

Introduction:

Orthodontic composite splints are used to fix anterior and posterior crossbites. Afterwards, traditionally bonded composite splints are removed with high-speed/low speed diamonds and polishing disks. Minimal damage to the temporary teeth is desired. Some tricks can be used in preparation of surfaces for bonded composite splints, e.g. etching the cusp tips of the teeth or adding a bit of dye. I use a touch of caries indicator dye in my bonded composite splints, which will aid in identification of natural tooth vs composite during removal.

Lasers	Fotona LightWalker
Wavelength	Er:YAG (2940 nm)
Handpiece	H14
Fibertip	Cylindrical tip 1.3 mm diameter
Energy	250 mJ
Power	3.75 W
Mode	MSP
Frequency	15 Hz
Water	3
Air	2



Dr. Terry Rose received his Bachelor of Science in 1981 and Bachelor of Dentistry degree from the University of Otago, New Zealand in 1984. He is a member of the International Academy of Oral Medicine & Toxicology (IAOMT). He completed the LA&HA Master's Program in Laser Dentistry (2017 -2019).

Dr. Rose is the Principal Dentist-Owner of the Smile In Style dental practice, established in 1989 in Moonee Ponds and Sunbury in Victoria, Australia. He has been active as a Lecturer for Progressive Orthodontic Seminars (POS) from 2008-2018. He has been using Dental Lasers in his dental practice since 2008.

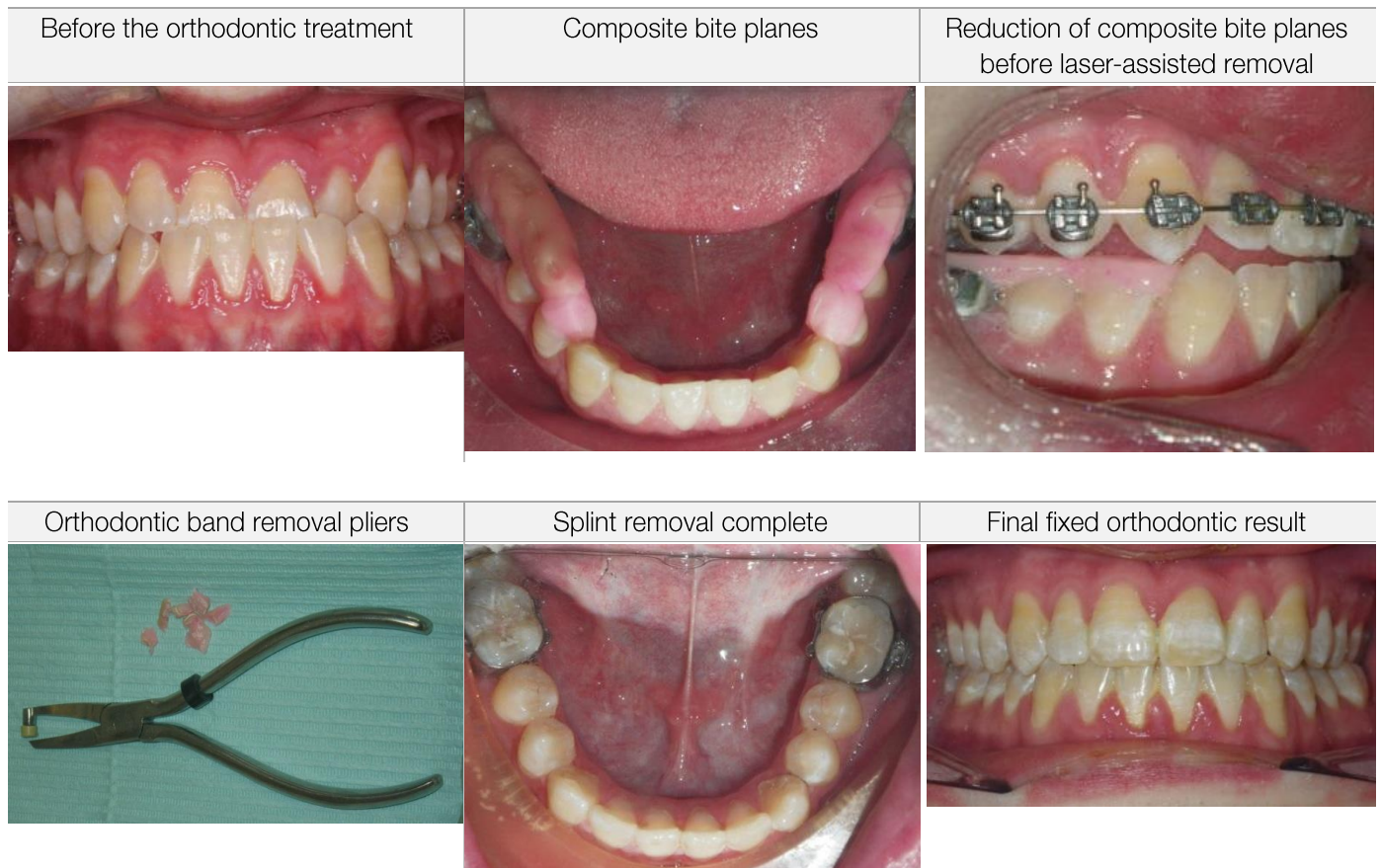
CLINICAL CASE:

A composite splint was used for disclusion, for a class III, anterior crossbite correction in a 23-year-old male. Short-term class III elastics were used for correction. This was a referral case from another dentist. The patient preferred not to undergo orthognathic surgical correction of his class III malocclusion. The 6's were banded, composite bite planes were built for disclusion, bonded to the lower posterior teeth (Figure 2). Incisal adjustments were made to the maxillary incisors and the upper arch was banded up.

When a positive overjet with correction of the anterior crossbite had been achieved, the splint had to be removed. A reduction of the posterior composite bite planes was made in preparation for removal and more effective laser light penetration (Figure 3). Normally, I prefer using the H02 tipless handpiece, but if the H14 tipped handpiece is chosen, take care to use a fiber tip of adequate diameter to cope with the laser energy output needed. After painting the composite splint surfaces using the laser (parameters in above Table), a pair of orthodontic band removal pliers enabled fairly easy removal of the splint with minimal damage to the underlying tooth surfaces (Figure 4 & 5). The final outcome of the orthodontic treatment can be seen in Figure 6.

My current preferred settings for composite splint removal are the same as those used for zirconia crown removal: H02 HP, 400 mJ, 12Hz, 4.8 W, SSP pulse, water 3, air 3.

The LightWalker is a useful tool for the removal of orthodontic composite splints. The same techniques have been used on other orthodontic cases in my practice.



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