

# Rotary instruments vs Er:YAG laser and Class V cavities: a clinical study.

MASSA E<sup>2</sup>., BORRELLI M<sup>2</sup>., BONETTI P., FORNAINI C<sup>1,2</sup>., BERTRAND MF<sup>1</sup>., ROCCA JP<sup>1</sup>.

(1) Laboratory of Surfaces – Interfaces in Odontology, University of Nice Sophia Antipolis ( France)  
(2) C.L.O.D. –Centri Laser di Odontoiatria e Dermatologia (Italia)

## CLINICAL REPORT

### AIM OF THE STUDY

The aim of this clinical observation was to evaluate the time consumed, the patient comfort and the aesthetical result of two methods used to prepare Class V cavities on the same patient (bur preparation [teeth 34,35] versus Er:Yag laser preparation [tooth 44]).



It was possible to remove the old filling materials, excepted for amalgam or metal alloys. (1).

### FINAL EVALUATION

Cavity preparations were both realized without local anaesthesia.

Time consumed is quite equal in both situations.

Aesthetical result may be considered satisfactory in both cases, as confirmed previously.<sup>(1)</sup> Patient's satisfaction is clearly observed when using laser versus mechanical methodology (absence of vibration).<sup>(2)</sup>

Other laser advantages are:

- Decontamination;
- Absence of micro-fracture risks;
- Absence of thermal damages (pulp tissue response to cavity preparations).

(1) Dostolova et al. *J. Clin. Laser Med. Surg.* 1998; 16 (5):273-82.

(2) Semez GF. et al., (ESOLA, 2003).

## Er:YAG laser Fidelis Plus™ (Fotona, Slovenia) – Air 18 / water spray 18

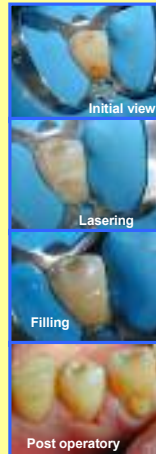
### Bur preparation

- ☉ tungstene bur.
- ☉ Diamond bur.
- ☉ working time: 130 sec.

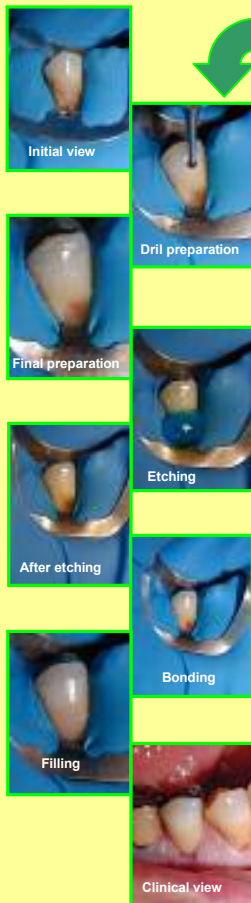


### Er:YAG preparation

- ☉ Energy: 250 mJ.
- ☉ Frequency: 15 Hz.
- ☉ Handpiece: sapphire.
- ☉ pulse duration: 50 µsec (SSP mode).



- ☉ Theoretical Power Density: 750 W/cm<sup>2</sup>.
- ☉ Theoretical Fluence: 50 J/cm<sup>2</sup>.
- ☉ Number of photons: 370 x 10<sup>16</sup>.
- ☉ Laser working time: 160 sec.



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