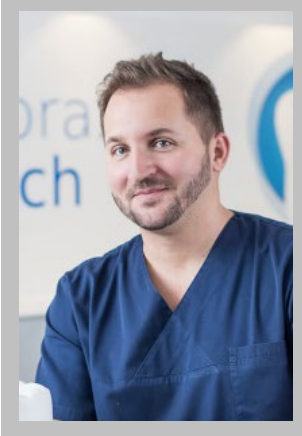


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Apicoectomy – Treatment of Chronic Apical Periodontitis

Andreas Klinkisch

Parameters:

	Step 1 Root resection	Step 2 Degranulation	Step 3 Coagulation and decontamination	Step 4 Biomodulation
Laser Source:	Er:YAG (2940 nm)	Er:YAG (2940 nm)	Er:YAG (2940 nm)	Nd:YAG (1064 nm)
Handpiece:	HC02	HC02	HC02	Genova
Energy:	300 mJ	125 mJ	160 mJ	
Power:	9 W	2.5 W	2.40 W	0.5 W
Frequency:	30 Hz	20 Hz	15 Hz	10 Hz
Mode:	SSP	MSP	VLP	MSP
Water:	6	8	0	
Air:	4	4	2	

Treatment procedure:

In this case, a 43 year old female experienced pain when biting and a throbbing tooth #25. She is a smoker, has low blood pressure and is allergic to contrast agent. After clinical and radiographical examination, a diagnosis of apical periodontitis was established.

The laser was chosen to remove the root apex for at least 3 mm (ramifications) because of the ability to cut faster with less trauma. We didn't want much bleeding and sewing and wanted to achieve a faster healing. For this treatment we chose the Er:YAG laser because we wanted to first remove the inflamed tissue without causing damage to deeper structures.

For the wound treatment after the apicoectomy, we used the photothermal effect of the Er:YAG laser for coagulation and its antibacterial effect. At the end, we used the Nd:YAG laser and the Genova handpiece for biomodulation. The retrograde root filling was done with an ultrasonic tip and bioceramic sealer.

The patient had no pain during the whole OP. Bleeding was minimal, but for the retrograde filling we had to take additional haemostatic agents (epinephrin pallets and 30% H2O2). The cutting of the root apex was very clean. Getting rid of all cystic tissue was very comfortable and fast in comparison to standard procedures.

Immediately after the OP, the patient felt much better than we and she expected. One day after the treatment the patient had no problems.



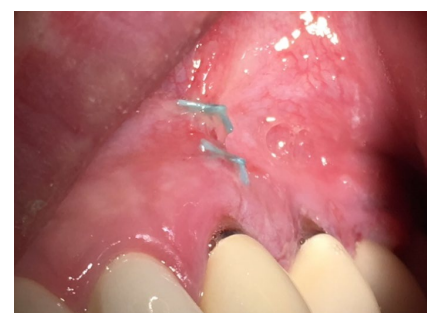
Lesion before apicoectomy



After apicoectomy



Root resection



Healing after 1 week



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