

**Dr. Jugoslav Jovanovic, MD**

Dr. Jovanovic is a researcher and lecturer in the field of lasers in oral applications and dentistry. He is a member of several international laser dentistry organizations and has lectured and published numerous articles on laser dentistry. He practices laser dentistry on a daily basis in his private practice in Kozarac – Prijedor, BiH in aesthetic dentistry, endodontics, periodontics and oral surgery. He is currently involved in several clinical research projects to serve these interest areas.



## **Pulsed Nd:YAG Laser Treatment of the Root Canal** *Dr. Jugoslav Jovanovic, MD, General Dentistry Clinic*

This clinical case presents the possibilities of using Nd:YAG lasers (1064 nm wavelength) to correct endodontic failure.

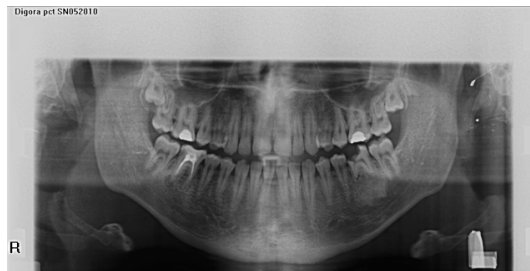
A 22-year old patient came to our office with endodontic failure of the tooth 46. The patient complained of having a sharp pain in the problematic tooth. After radiography, periodontal progression could clearly be observed at the apex of the distal root apex (see Picture 1). The tooth was opened and we started to clean out the filling material from the two root canals that had prior been treated by another dentist. In doing so, we discovered two more root canals which had not been treated. After mechanical preparation and chemical cleansing, rinsing and drying of all four root canals, we introduced Fotona's Nd:YAG fiber (200 µm) and irradiated the four canals five times for five seconds in the apical-coronal direction. After irradiation the root canals were filled with Apex cal and closed for 3 days. We performed 3 therapy sessions every 3 days and finally filled the canals with a root canal sealer paste and gutta-percha points.

Parameter settings:

<b>Laser source:</b>	Pulsed Nd:YAG
<b>Wavelength:</b>	1064 nm
<b>Mode:</b>	VSP
<b>Frequency:</b>	15 Hz
<b>Power:</b>	1.5 W

On the control radiography following the therapy we could observe the four canals successfully filled up to the apex (see Picture 2).

This clinical case supports research conducted by Dr. Norbert Gutknecht – the first to demonstrate therapeutical success in treating endodontic failure with the Nd:YAG laser - that Fotona's pulsed Nd:YAG laser is the laser source of choice for endodontic treatment because of its deep penetration depth (more than 1000µm) into the lateral dental tubulus and extreme efficiency on germ eradication.



Picture 1: Periodontal progression on tooth 46



Picture 2: The four canals filled up to the apex post-treatment

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