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Effect of Cooling Water on Ablation in Er:YAG Laserosteotome of Hard Bone

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The aim of this paper is to examine the effect of pig bone immersion in different levels of cooling water during laser ablation with a Er:YAG laser. The laser worked at 2940 nm wavelength and 10 Hz repetition rate in microseconds pulse duration regime. The bone was immersed in different levels of cooling water in a sample container for preventing carbonization. The bone samples were ablated with fixed deposited energy to investigate at which water level Er:YAG lasers start ablating bone through a layer of water. Results showed that the maximum level of water that laser can pass through to start the ablation nonlinearly depends on pulse energy.
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