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WORLD FEDERATION FOR LASER DENTISTRY
2008 HONG KONG CONGRESS
F. SPERANDIO*
30 July (Day 3) Seminar Room 09:45 - 10:00
Study of the healing process of an Er,Cr:YSGG laser incisions in rat tongue
The aim of the present study was to compare the healing process of an Er,Cr:YSGG laser and scalpel incisions in rat tongues by analyzing the expression of extracellular matrix proteins and myofibroblasts. Er,Cr:YSGG laser (Biolase), 2.78 µm, pulsed duration of 140-200 µs, repetition rate of 20 Hz and 2.0 W of power output was used. The delivery system consisted on a fiber-optic tube terminating in a handpiece with sapphire crystal tip bathed in an adjustable air-water spray. The tip used in the present study had 600 µm in diameter (spot size 0.0028 cm²), with 100mJ of energy per pulse and 35.7 J/cm² of energy density. Twenty-four Wistar rats were selected and four incisions were performed in each dorsal side of the rat tongue. One was made by a scalpel and the others by the Er,Cr:YSGG laser using three different regulations of air-water spray – 11%/7%, 50%/50% and 100%/0%. Animals were euthanized 0, 24, 48, 72 hours, 7 and 14 days after surgery and tissues studied by histology and immunohistochemistry. Air-water regulation did not significantly differ among laser groups. Scalpel incisions were lined by keratinized squamous cell epithelium before incisions performed by laser. Concerning fibronectin staining, laser groups and scalpel groups were different; type III collagen staining was less uniform for the laser groups. Presence of myofibroblasts was unexpressive in all studied groups. Fibronectin and type III
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