TITLE (ALL CAPS, 20 words or less)	IMMUNOHISTOCHEMICAL EVALUATION OF BLEEDING CONTROL INDUCED BY HOLMIUM LASER AND BIOLASE DENTAL LASER AS COAGULATING DEVICES OF INCISIONAL WOUNDS
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Abstract (No more than 300 words including section titles)	**Hypothesis:** : Laser use in the medical field brought many enhancements to clinical and surgical procedures. Many different devices are now available for dental use. Lasers have sterilizing and coagulative effects that greatly reduce intraoperative bleeding, postoperative pain and inflammation, which in turn enhances the healing process and reduces tissue scarring significantly. **Objective:** The aim of this study is to compare the ability and quality of both Holmium and Biolase dental laser to induce bleeding control and coagulation of incisional wounds by measuring the extent of lateral tissue damage. **Methods:** Tissue Treatment: Four incisions were made in live porcine skin using a scalpel for each laser to be tested. One control incision was not exposed to laser treatment, and remaining incisions were treated with either the Holmium or Biolase dental laser. The tissues were then harvested for further processing. IHC Staining:. Standard IHC techniques were used with the BA-9020 Biotinylated, Anti-swine IgG (H+L) antibody (Vector Laboratories, Inc., Burlingame, CA). Damaged tissue appears purple.

	Image Capture: A Zeiss Axiovert 40 CFL inverted, digital light microscope (20X magnification) was used to digitize images. An Immunera Corp., InfinityX-32C, 32 megapixal CCD camera was used with image creation software for image capture. 3D image comparison: The OmegaDesk (specialized hard ware device) was used to create 3D images to compare the extent of tissue damage. **Results:** Lateral tissue damage caused by Holmium and Biolase dental laser was measured according the immunohistochemical staining technique which appears purple in color. The depth and the amount of lateral tissue damage were measured. Holmium showed a higher extetent of tissue damage in comparison to Biolase which showed minimal tissue damage. **Conclusions:** Based on the evaluation techniques used, the Holmium laser is more efficient creating bleeding control and coagulation effects more than Biolase dental laser. **Funding:** united states airforce Surgeon general's office under agreement numberFA7014-09-2-0003 **IRB/ACCC protocol:** 12-212