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Laser-Patterned Microcoagulation (LPM) Technology: Clinical study of gingiva regeneration in implantation zone**Ekaterina A Zernitckaia**

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Fractional laser treatment is a new concept of laser treatment of tissue. The concept of fractional treatment or Laser Patterned Microcoagulation or Microablation (LPM) can be explained as formation in the tissue of islets of damaged tissue surrounded by viable tissue. Tissue regeneration occurs through natural tissue healing response which includes a cascade of processes, such as removal of “old” tissue in the damaged islets and replacement with new extracellular matrix and “young” somatic cells, and stem cell recruiting and activation. Multifractional treatment can initiate complete regeneration of treated tissue. Theoretical and experimental data of patterned islets of tissue damage in skin, gingiva, and bone with different lasers will be presented. The tissue regeneration process can be regulated and optimized by proper selection of laser parameters, such as wavelength, pulse width, size of microbeams, and their density.

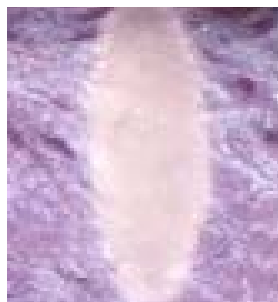
Objective: In this presentation we will review novel methods of tissue regeneration around dental implants using controlled fractional tissue damage and natural healing process.

Method: A diode laser with a wavelength of 1550 nm, power of 25 W, and pulse width in the range 60 to 250 ms was used for gingiva regeneration around the implant suprastructures.

Conclusions: Fractional laser treatment is safe and effective method effecting the oral mucosa. It was proven that fractional lasers can be used for gingival and bone regeneration which has great potential for a new minimally invasive method of treatment of different dental conditions.



Micro column of tissue coagulated with laser system.



Histology of vertical cross-section of column

Biography

Ekaterina A Zernitckaia has completed her postgraduate studies in maxillofacial surgery department in I.P. Pavlov First St. Petersburg State Medical University. She is PhD student and her dissertation work deals with laser treatment in implantology. She has her private practice as an oral surgeon in Saint-Petersburg. She has published more than 7 papers in domestic and international journals and made a several presentations on international congresses.

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