INVESTIGATION OF THE DESTRUCTION OF BIOLOGICAL TISSUES BY LASER RADIATION WITH A WAVELENGTH OF 405 NM FOR SURGICAL CORRECTION OF AN INGROWN NAIL

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Abstract

The use of laser radiation with a wavelength of 405 nm can significantly improve the effectiveness and quality of treatment of onychocryptosis. The possibility of creating micropores on biological tissues (nail plates, skin and muscle tissue of a chicken) using InGaN laser radiation with a wavelength of 405 nm was demonstrated. The dependences of the incision depth and the width of the damaged zone of biological tissues on the laser radiation power, the scanning speed of the laser beam and the number of impacts at one point on the surface of the biological tissue by laser radiation with a wavelength of 405 nm are obtained. In this paper, the dependences of the rate and efficiency of destruction of biological tissues on the parameters of laser radiation are obtained. The optimal parameters of laser radiation for the effective destruction of biological tissues have been determined, which makes it possible to make an incision with a depth of 0.5-1.5 cm to the periosteum to remove pathologically altered biological tissue.