

LASER THERAPY AND TREATMENT OF ANASTOMOSITS AFTER INTERVENTION FOR DUODENAL PEPTIC ULCER

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(Experimental study)

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Relevance: Peptic ulcer (PUD) of the stomach and duodenum (PUD) is one of the most common pathologies in all regions of the world. Against this background, "The problem of surgical treatment of complicated forms of PU remains highly relevant, which is associated, on the one hand, with the effectiveness of conservative and endoscopic measures, when the most severe contingent of patients is subject to surgical treatment, on the other hand, with a high risk of developing various postoperative complications." Technical errors of operations on the stomach are more often manifested in the form of anastomoses of varying severity.

The purpose of the study. To improve the effectiveness of the treatment of late anastomoses by developing a technique for using low-energy lasers and endoscopic technologies, an experimental study was initially conducted.

Material and Methods: The experiments were carried out on outbred male laboratory rats weighing 200-250 grams, which were kept in a vivarium. In total, the experiment was carried out on 30 animals. Improving the method of laser treatment of late anastomosis after surgical interventions on the stomach and duodenum was initially based on an experimental assessment of the effect of laser exposure on the area of inflammation. A method for treating late anastomosis consists in laser irradiation of the anastomosis zone with two types of low-energy lasers: endoscopic irradiation of the anastomosis mucosa using light fiber optics with a diameter of 400-500 μm , radiation in the spectrum of 337 nm, a power of 3 mW, a duration of 1-2 minutes per 1 cm^2 of the mucosal area. In total, 3 sessions of irradiation were carried out every other day (for example, 1 session on Monday, 2 session on Wednesday, 3 session on Friday), as well as combined exposure to radiation in the 890 nm spectrum, frequency 80 Hz, pulse power 5-7 W for 3- 4 minutes percutaneously in the projection of the anastomosis daily for 4-7 days. Explanation of dosages: Radiation in the spectrum of 337 nm has a bactericidal and anti-inflammatory effect. The bactericidal effect is manifested starting from 45 seconds, increasing the dose with exposure to more than 2 minutes enhances the damaging effect on the mucosa of the gastrointestinal tract.

Result and discussion Efficiency of laser irradiation on the course of ligature anastomosis (main experimental group). In the main group of animals, where 21 days after suturing the gastrotomy wound, a therapeutic effect was carried out according to the program developed by us using low-energy lasers in the range of 337nm and 890nm, the following changes were noted: reduction in the number of ligatures in the area of the anastomosis.

Conclusions: The studies allowed convincingly demonstrating that the formation of single-row interrupted sutures during suturing the wound of the stomach can be accompanied by a long discharge of ligatures and the formation of the phenomenon of ligature anastomosis, deformation of the gastric lumen, and also create a picture of a peptic ulcer of the anastomosis. Conducting sessions of laser irradiation is aimed at an accelerated reduction in the phenomena of inflammation of the mucosa in the anastomosis area (UV radiation in the spectrum of 337 nm), as well as a decrease in the phenomena of cicatricial transformation of

the anastomosis zone (IR radiation in the spectrum of 890 nm), which prevents long-term persistence of ligatures in the stomach wall .

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