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Selecting the Optimal Surgical Approach in Perforated Gastro-Duodenal Ulcers with Diffuse Peritonitis: The Role of Laparoscopy

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Relevance. Perforated gastric and duodenal ulcers complicated by diffuse peritonitis remain one of the most critical forms of acute abdomen, associated with high mortality and frequent postoperative complications. With the development of minimally invasive technologies, laparoscopic treatment is gaining increasing attention due to its lower surgical trauma and faster recovery. However, the widespread use of laparoscopy in the presence of diffuse peritonitis is limited by the absence of unified selection criteria, which makes the investigation of this topic highly relevant.

Materials and Methods. A retrospective analysis was conducted at a multidisciplinary clinic, involving 114 patients with perforated gastroduodenal ulcers complicated by diffuse peritonitis. The main group included 59 patients who underwent laparoscopic ulcer closure and abdominal sanitation, while the comparison group consisted of 55 patients treated via conventional open surgery. Surgical duration, complication rates, mortality, and length of hospital stay were evaluated. Statistical processing was performed using Student's *t*-test and the χ^2 test, with differences considered significant at $p < 0.05$.

Results and Discussion. In the main group, laparoscopic intervention was successfully completed in 91.5% of cases, with a postoperative complication rate of 16.9%, compared to 32.7% in the comparison group ($p = 0.04$). Although operative time was longer in the laparoscopic group, the hospital stay was significantly shorter (6.8 vs. 9.5 days, $p = 0.002$). Mortality did not differ significantly between groups (1.7% vs. 3.6%). The findings demonstrate that laparoscopic treatment is effective and appropriate in selected patients presenting with stable hemodynamics, perforation duration less than 24 hours, and ulcer size under 10 mm.

Conclusion. Laparoscopic management of perforated gastroduodenal ulcers with diffuse peritonitis offers better postoperative outcomes when patients are appropriately selected. Key selection criteria include hemodynamic stability, early stage of perforation, absence of suspected malignancy, and technical feasibility of laparoscopic intervention. Thus, applying an individualized approach to surgical strategy improves treatment results and broadens the indications for minimally invasive techniques in emergency abdominal surgery.