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EMERGENCY LAPAROSCOPY FOR THE DIAGNOSIS OF ACUTE ABDOMINAL CONDITIONS WITH UNCERTAIN CLINICAL FEATURES

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Relevance: Acute diseases of the abdominal organs remain one of the leading causes of emergency hospital admissions and urgent surgical interventions worldwide. Particular diagnostic difficulties arise in patients with an unclear or atypical clinical presentation, when standard diagnostic methods—clinical assessment, laboratory investigations, ultrasonography, and computed tomography—may be insufficient to establish an accurate diagnosis in a timely manner. Diagnostic uncertainty and delayed decision-making often result in disease progression, increased risk of complications, and poorer clinical outcomes.

In such situations, emergency laparoscopy represents a valuable diagnostic and therapeutic tool, allowing direct visualization of the abdominal cavity, clarification of the source and extent of pathology, and, if necessary, immediate surgical correction. The minimally invasive nature of laparoscopy contributes to reduced surgical trauma, fewer postoperative complications, and shorter hospital stays. Despite advances in imaging technologies, the optimal role and indications for emergency laparoscopy in cases of unclear acute abdominal pathology remain a subject of discussion, underscoring the relevance of further clinical evaluation of this method.

Aim of the study: To assess the diagnostic value and clinical effectiveness of emergency laparoscopy in patients with an unclear clinical presentation of acute abdominal diseases and to evaluate its impact on the choice of surgical management.

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Materials and methods: The study was conducted at the Khorezm Branch of the Republican Scientific Center of Emergency Medical Care (RSCEMC) on the basis of surgical departments. From 2020 to 2025, a total of 20,493 surgical interventions were performed, including 9,461 open abdominal operations. The study group consisted of 2,479 (26.2%) patients with urgent abdominal pathology who underwent laparoscopic interventions during the study period.

A parallel comparative analysis of laparoscopic and open surgical approaches was carried out. All patients underwent comprehensive clinical examination using standard laboratory and instrumental diagnostic methods, including general and biochemical blood tests, coagulation profile assessment, abdominal radiography, ultrasonography, computed tomography (with contrast enhancement when indicated), and, in selected cases, magnetic resonance imaging. Endoscopic examinations included fibroesophagogastroduodenoscopy, while patients with cholelithiasis underwent ERCP with papillotomy when required.

The age of patients ranged from 23 to 77 years, with 961 (38.7%) individuals aged over 60 years. Laparoscopic procedures included cholecystectomy for acute calculous cholecystitis (80%), diagnostic and therapeutic laparoscopy, thoracoscopy, appendectomy, closure of perforated gastric and duodenal ulcers, gynecological interventions, adhesiolysis, and ureterolithotomy.

Results: The use of emergency laparoscopy significantly improved the accuracy of diagnosis in patients with an unclear clinical presentation of acute abdominal diseases. In many cases, laparoscopy served as the definitive diagnostic method when clinical, laboratory, and imaging findings were inconclusive or contradictory.

The laparoscopic approach enabled precise assessment of intra-abdominal pathology and allowed immediate transition from diagnostic procedures to definitive

surgical treatment in the majority of patients, thereby reducing the need for diagnostic laparotomy. Comparative analysis demonstrated that laparoscopic interventions were associated with lower intraoperative blood loss, reduced postoperative complication rates, faster recovery, and shorter hospital stays compared with open surgery. These advantages were also observed in elderly patients.

Overall, the findings confirm the high diagnostic and therapeutic effectiveness of emergency laparoscopy in complex and ambiguous cases of acute abdominal pathology.

Conclusion:

Emergency laparoscopy is a highly effective and informative diagnostic method for acute diseases of the abdominal organs in patients with an unclear clinical presentation. Its use allows timely diagnostic verification, objective assessment of the pathological process, and determination of optimal surgical tactics. The possibility of combining diagnostic and therapeutic stages within a single intervention contributes to a reduction in unjustified laparotomies, decreased surgical trauma and postoperative complications, and shorter hospital stays. The results obtained indicate the feasibility and necessity of wider implementation of emergency laparoscopy in diagnostic and treatment algorithms for patients with urgent abdominal pathology.

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