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ULTRASOUND EXAMINATION IN THE PREVENTION OF COMPLICATIONS OF OPERATIONS ON THE BILIARY TRACT

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ABSTRACT

The analysis of the results of ultrasound examinations of patients with acute cholecystitis allowed us to conclude that this method is an important diagnostic measure, with the help of which it is possible not only to improve the diagnosis of cholecystitis, to determine the choice of the method of cholecystectomy, but also to provide for the development of complications during its implementation. The literature data and our observations indicate that errors made at the diagnostic stage create not only difficulties in choosing the method of cholecystectomy, but also lead to the occurrence and development of complications. Depending on the density and prevalence of paravesical infiltrate, which creates the greatest danger of performing LHE, we identified three types of paravesical infiltrate that affect the choice of the method of surgical aid.

KEYWORDS: *Gallbladder, Ultrasound Examination, Cholecystitis, Laparoscopy.*

INTRODUCTION

The increase in the incidence of cholelithiasis is primarily associated with an increase in the average life expectancy, an increase in the number of elderly and senile patients and an increase in the welfare of the population [1,3,5,6]. Due to the growing number of patients with cholecystitis, the number of operations has increased dramatically in recent years, not only in large surgical clinics, but also in regional hospitals. From the point of view of physical, emotional, psychological and social functioning of patients, laparoscopic cholecystectomy (LCE) is superior to traditional. In laparoscopic cholecystectomies, the costs are compensated by reducing the time of patients' stay in hospitals and rehabilitation, reducing the volume of medications and reducing the output of disability and mortality [2,4,7].

Ultrasound is an elastic vibration of particles of a material medium with a frequency of more than 20 kHz, i.e. above the threshold perceived by the human ear. Modern ultrasound equipment is based on the principle of echo location, and all diagnostic devices operate in pulse mode. It is important to know that in the radiation mode, the sensor of the device works only 0,1% of the cycle time, whereas in the reception mode – 99,9% [1,3]. Such a rhythm of work is one of the factors that determine the safety of ultrasound examinations. Echography is not associated with ionizing radiation, which distinguishes it from, for example, computed tomography and puts it in the category of harmless techniques (echography is allowed to be used during pregnancy due to the absence of a possible damaging effect on the fetus), [1,6].

The widespread introduction of laparoscopic technologies in the surgical practice of acute cholecystitis has led to an increase in various complications. The literature data and our observations indicate that errors made at the diagnostic stage create not only difficulties in choosing the method of cholecystectomy, but also lead to the occurrence and development of complications. Failure to recognize such a danger at the diagnostic stage leads to an incorrect choice of the operation method, and performing laparoscopic cholecystectomy (LCE) "at any cost" causes serious errors, followed by complications. In the structure of patients with acute abdomen, acute cholecystitis occupies the second place after acute appendicitis, acquiring the significance of a socio-economic problem [3, 4,7].

The aim of the study was to improve the results of mini-invasive surgical interventions in acute cholecystitis using sonographic studies.

MATERIALS AND METHODS

Giving a key place in the preoperative diagnosis to ultrasound examination (ultrasound), which gives not only the possibility of determining the main etiological factors of acute cholecystitis, but also the objectivity of the degree of severity of inflammatory changes in the gallbladder wall and paravesical space. The results of 235 ultrasound examinations of patients with acute cholecystitis, the course of which was complicated by paravesical infiltration, were analyzed.

Results

We carried out the comparative analysis of results of laparoscopic and traditional cholecystectomy. Complications in a basic group: empyema (10,2%), edema of a gall bladder (7,8%), paravesical infiltrate (4,5%), phlegmon of a gall bladder (2,8%), and in control group: local peritonitis — 12%; empyema of a gall bladder — 11,1% and an edema of a gall bladder — 6,8%. Duration of a laparoscopic cholecystectomy was averaged by 42,3±3,2 minutes. Intraoperative complications: bleeding from a vesical artery and a bubble bed (2,73%), a trauma of the choledochus (0,27%) and in 1 one case damage of a duodenum.

The average percentage of conversion was (5,7%). Conversion reasons: existence of the inflammatory infiltrate in a neck of a gall bladder (28,9%), extensive adherent process in an abdominal cavity (20,5%) and bleeding from a vesical artery and a bed of a gall bladder (19,3%), technical difficulties, a choledocholithiasis and fistula of choledochus-bladder.

Postoperative complications: wound suppuration, expiration of bile, bleeding, pancreatitis. Lethality: at a laparoscopic cholecystectomy — 3 (0,21%), at traditional — 2 (0,65%).

The most characteristic ultrasound picture for paravesical changes is the presence of a zone of increased echogenicity, doubling and indistinctness of contours, thickening of the gallbladder wall. In addition, poor visualization of the neck of the gallbladder, shortening of the visible part of the choledochus, "a symptom of a continuous acoustic shadow" also indicate pronounced changes in the paravesical space.

Depending on the density and prevalence of paravesical infiltrate, which creates the greatest danger of performing LHE, we identified three types of paravesical infiltrate that affect the choice of the method of surgical aid. The first type is a loose infiltrate, the second type is a dense infiltrate, the third type is characterized by a more pronounced density with hyperechoic inclusions in the form of small bands of 0,5-1 cm in size, located in the projection of the gallbladder and the liver gate.

The revealed ultrasound changes allowed us to optimize not only the diagnostic process in acute cholecystitis, but also to justify the choice of the method of surgical intervention.

CONCLUSIONS

1. The analysis of the results of ultrasound examinations of patients with acute cholecystitis allowed us to conclude that this method is an important diagnostic measure, with the help of which it is possible not only to improve the diagnosis of cholecystitis, to determine the choice of the method of cholecystectomy, but also to provide for the development of complications during its implementation.
2. Paravesical infiltrate in acute cholecystitis not only creates difficulties in performing laparoscopic cholecystectomy, but also conceals the dangers of its implementation.
3. Ultrasound examination in complicated acute cholecystitis allows you to determine the choice of the method of cholecystectomy, thereby reducing the frequency of complications.

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