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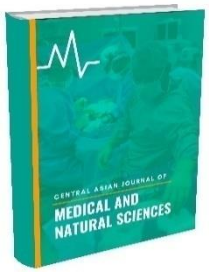

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Fast Technology for Ultrasonic Diagnosis of Acute Coleculosis Cholecystitis

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Abstract: One of the first places in urgent surgery, in terms of frequency of occurrence, is acute cholecystitis. The clinical course of acute cholecystitis is characterized by the rapid development of wall destruction gallbladder and the appearance of such terrible complications as peritonitis, perivesical abscess, purulent cholangitis. On Based on the introduction of ultrasonic fast technology in 245 patients, a 97.5% improvement in the effectiveness of modern ultrasound technologies in the diagnosis of acute calculous cholecystitis was achieved and rational diagnostic tactics were developed for this disease.

Key words: acute cholecystitis, peritonitis, perivesical abscess, purulent cholangitis, ultrasound fasttechnology.

The urgent need to study the issues of ultrasound diagnosis of acute calculous cholecystitis, the development echosemiotics of each of its forms, timely determination of the presence of purulent complications is associated with the peculiarities of the clinical course of acute cholecystitis, characterized by the rapid development of destruction of its wall and the appearance of such formidable complications as peritonitis, perivesical abscess , purulent cholangitis. One of the first places in urgent surgery, in terms of frequency of occurrence , takes acute cholecystitis. Features of the clinical course of acute cholecystitis are characterized by the rapid development of destruction of its wall and the appearance of such formidable complications as peritonitis, perivesical abscess, purulent cholangitis, etc. The prognosis of the disease largely depends on the timely assistance provided and the clinical form of the disease.

At present, due to the widespread introduction into practice ultrasound method of research, new opportunities for objective assessment of the degree of inflammatory changes in the gallbladder wall and perivesical space. The use of ultrasound techniques should be carried out by everyone without exclusion in patients with suspected acute cholecystitis, regardless of the severity of clinical symptoms. Thus, in practical surgery there is an urgent need to study the issues of ultrasound diagnosis of acute calculous cholecystitis, the development of echo semiotics of each of its forms, determination of the presence of purulent complications.

We conducted a clinical study, the purpose of which was to improve the effectiveness of modern ultrasound technologies in the diagnosis of acute calculous cholecystitis, the development of rational diagnostic tactics for this disease.

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Materials and methods.

The study, as a control group, included the results of ultrasound examination (ultrasound) of the gallbladder in 378 patients aged 18 to 80 years. 186 men and 192 women were selected, in whom, according to the results of a comprehensive clinical and instrumental study, pathology of the abdominal organs and retroperitoneal space was excluded. Ultrasound was performed with Consona scanners N 9 Mindray (China) in real time. The results of ultrasound and treatment of 245 patients who were hospitalized in the monoprofile clinic of the Samarkand State Medical University , who had 30.6% catarrhal cases, in 69.4% of cases destructive calculous cholecystitis. Half of the patients were admitted to the hospital in the first 4 days (123, or 50.2%). noted a direct relationship between the duration of the disease and the form of acute cholecystitis. The number of destructive forms of acute cholecystitis increased as time between the first clinical manifestations of the disease, hospitalization and provision of adequate medical care. So, in patients who applied for medical help on the first day from the onset of the disease, the number of destructive forms did not exceed 5.3%. Already in the first four days, the number of patients with destructive forms increased by 3 times (19.6%). More than 97.6% of patients were persons over the age of 40. All patients underwent a comprehensive general clinical examination upon admission to the hospital. The presence of pathological changes in the gallbladder and bile ducts was diagnosed taking into account the clinical picture, data from laboratory, ultrasound, and endoscopic methods of investigation and was verified both intraoperatively and according to the results of histological studies.

In 16.7% of cases, acute cholecystitis was accompanied by mechanical jaundice, in 6.1% - widespread peritonitis, in 7.3% of cases the disease was complicated by the development of perivesical abscess. In 92.7% of cases, cholecystitis was obstructive .

Results and discussion. Intravesical biliary hypertension was an increase in the size of the gallbladder. As diagnostic criteria for intravesical hypertension during ultrasound examination, the length and thickness of the gallbladder, as well as the area of the longitudinal section in the plane of maximum section and volume, were evaluated. The cause of intravesical biliary hypertension was a calculus in neck of the gallbladder, which was located in almost all patients. A change in the linear dimensions of the gallbladder was registered in 91.4% of patients with acute calculous cholecystitis. The length of the gallbladder ranged from 85 to 143 mm, and the thickness from 30 to 51 mm, averaging 105±4 mm and 42±3 mm, respectively. The area of the maximum longitudinal section varied from 15.9 to 27.1 cm2, averaging 19.5±1.4 cm2.

In the control group, the linear dimensions of the gallbladder were within 63-105 mm - length, up to 32 mm - width and 14-18.6 cm2 - area of the longitudinal section. We noted the most significant change in the width of the gallbladder in obstructive cholecystitis. In addition, among 43 patients with acute obstructive cholecystitis without a significant increase in the longitudinal size, the transverse size did not exceed 32 mm only in 7 cases.

The state of the gallbladder wall and paravesical tissues is crucial importance in making a correct conclusion. Normally, in the control group, the wall of the gallbladder was smooth, homogeneous, its thickness did not exceed 2.8 mm. In the catarrhal form of acute cholecystitis, a thickening of the wall up to 5–6 mm was observed without signs of delamination and the “double contour” symptom. The absolute wall thickness had no independent diagnostic value; in our observations, it ranged from 2.8 to 13 mm. It should be noted that with wall thickening, the frequency of detection of wall dissection and the “double contour” symptom increased. So, if at with a wall thickness of 3–5 mm, the “double contour” symptom was detected only in 4.5% of patients with acute calculous cholecystitis, then at 6–8 mm - in 43.7%, and over 9 mm always determined. Identification of the symptom of "double contour" indicates the exit of the pathological process beyond the limits of the bladder wall and is

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interpreted as acute destructive cholecystitis. Further differentiation depended on condition of paravesical tissues.

Perivesical abscesses were localized, as a rule, in the zone of the gallbladder bed or near it in the form of hypo-anechoic areas of irregular rounded shape with fuzzy contours and a zone of perifocal increased echogenicity.

Peritonitis was detected in the form of echo-signs of free fluid in the form of mantle-like and triangular echo-negative structures in the subhepatic space, under the diaphragmatic space and the small pelvis, as well as Morisson's space. In fourth place in terms of diagnostic significance were ultrasonic changes in the cavity of the gallbladder. Application _ _ hyperechoic suspension in its lumen, in combination with other echo-signs, reliably indicated the presence of an inflammatory process. So, in acute cholecystitis without destruction of the wall, a hyperechoic suspension in the lumen of the gallbladder was detected by us in 16.7% of patients, with acute destructive cholecystitis without extracystic complications - in 60.8% of cases and in 78.8% of cases with acute destructive complicated cholecystitis.

The symptom of " hepatization " of the gallbladder was observed in 11% of patients with calculous cholecystitis. The lumen of the gallbladder was filled with weighted echopositive linear structures of medium and moderately increased echogenicity , indistinguishable from the hepatic parenchyma. According to the results of surgical intervention, such an echocardiogram was characteristic of gallbladder empyema. In 5 patients with gangrenous cholecystitis, we observed echographic a symptom of "hanging" into the cavity of the gallbladder of the mucosal area. Ultrasonic Murphy's symptom was recorded in all patients with acute calculous cholecystitis, allowed identify the zone of maximum pain with the bottom of the gallbladder.

Analysis of the data obtained showed that for catarrhal forms of acute calculous cholecystitis, it was typical to seek medical help for the first day from the onset of the disease. Ultrasound picture: increase in thickness gallbladder more than 30 mm, moderate echographic Murphy's symptom , thickening of the gallbladder wall over 2.8 mm to 5-6 mm, while the wall homogeneous, no perivesical complications. Destructive cholecystitis was characterized by later hospitalization, the appearance of inflammatory suspension in the lumen of the gallbladder, a significant thickening (over 9 mm) and stratification of its wall, an increase in all linear and quadratic dimensions of the gallbladder bladder, the presence of perivesical abscesses in 7.3% of cases , and widespread peritonitis in 6.1%.

Conclusions.

Thus, ultrasound makes it possible to most accurately determine the form of acute calculous cholecystitis, identify the presence of extravesical complications, and predict the course of the inflammatory process. Based on the introduction of ultrasonic fast technology in 245 patients, a 97.5% improvement in the effectiveness of modern ultrasound technologies in the diagnosis of acute calculous cholecystitis was achieved and rational diagnostic tactics were developed for this disease.

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