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Modern Approaches To Surgical Treatment Of Parasitic Obstructional Jaundice (Fasciola Hepatica)

Turakulov Uktam Nurmamatovich

Doctor of Medical Sciences, Associated Professor. Center for the development of professional qualification of medical workers. Tashkent, Uzbekistan

Khabibullaev Shokhrukh Ravshanzhonovich

Researcher, International Medical University "Central Asian Medical University", Uzbekistan

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Abstract: Fascioliasis hepatis complicated by obstructive jaundice is a rare but clinically challenging form of parasitic infection of the hepatobiliary system, associated with a high risk of diagnostic errors and severe complications. Therefore, the choice of appropriate surgical tactics with a focus on minimally invasive techniques is of particular importance. The aim of this study was to evaluate the efficacy of endoscopic diagnostic and treatment methods for obstructive jaundice of parasitic origin caused by Fasciola hepatica. Materials and Methods. In 2023, 28 patients with bile duct obstruction caused by Fascioliasis hepatis were treated at the Endomed Clinic (Fergana, Uzbekistan). All patients underwent early endoscopic retrograde cholangiopancreatography (ERCP) for diagnostic and therapeutic purposes, followed by endoscopic papillosphincterotomy and parasite removal. Results. In all cases, biliary obstruction was eliminated and clinical manifestations of obstructive jaundice regressed. The average hospital stay was 4.7±1.4 days. Open surgery was not required. Conclusions: Endoscopic minimally invasive techniques are an effective and safe treatment for obstructive jaundice of parasitic origin, reducing hospital stay and the risk of postoperative complications.

Keywords: Liver fascioliasis, mechanical jaundice, biliary obstruction, ERCP, surgical treatment.

Introduction: Fascioliasis of the liver complicated by obstructive jaundice is a rare but clinically challenging form of parasitic infection of the hepatobiliary system, associated with a high risk of diagnostic errors and severe complications [1, 2]. The lack of clear surgical algorithms and late diagnosis verification often lead to unnecessary traumatic interventions and poor treatment outcomes [3, 4]. In the setting of bile duct obstruction, a rational choice of surgical approach with a focus on minimally invasive techniques is particularly important [5-7]. The development and optimization of a surgical approach for this condition remains a pressing issue in modern abdominal surgery.

METHODS

In 2023, 28 patients with biliary obstruction caused by Fasciola hepatis were treated at the private clinic "Endomed" (Fergana, Uzbekistan). There were 20 women and 8 men. The average age of the patients was 41 ± 14.3 years. The patients' complaints on admission were generally similar to the classic picture of obstructive purulent cholangitis. All patients underwent endoscopic retrograde cholangiopancreatography (ERCP) within the first 24 hours of hospitalization (depending on the severity of their condition), which not only confirmed the diagnosis but also served as a therapeutic option.

RESULTS

As an example, we provide an extract from the medical record of patient M. Patient M., 45, was an inpatient in the surgery department of the Endomed Clinic from May 2 to 7, 2023. He was admitted with complaints of diffuse pain and a feeling of heaviness in the epigastrium and right hypochondrium, general weakness, yellowing of the skin, nausea, vomiting, loss of appetite, acholic stool, and dark urine. From the anamnesis: he had been ill for 6 days, when after eating fatty foods he noted pain in the right hypochondrium

and epigastrium, radiating to the interscapular region. He also experienced weakness, dry mouth, and intermittent nausea with vomiting of bile. This was his first attack of this nature; he denies a history of gallstones. Two days prior to admission, the pain attacks intensified in waves. The clinical picture was supplemented by sudden yellowing of the skin and visible sclera, the development of acholic stool, and darkening of the urine. However, the classic clinical picture of cholangitis was absent. Objectively: the general condition upon admission was moderate. Consciousness is clear. The skin and sclera are icteric. Peripheral lymph nodes are not enlarged. Vesicular breathing in the lungs is observed on both sides. Heart sounds are muffled and rhythmic. Pulse is 8.4 beats per minute, blood pressure is 120/80 mmHg. The tongue is moist and coated. The abdomen is not distended and participates evenly in the act of respiration. On palpation, the abdomen is soft, with tenderness in the right hypochondrium and epigastrium. Shchetkin-Blumberg's sign is negative, there is no tension in the muscles of the anterior abdominal wall. The liver, gallbladder, and spleen are not palpable. Percussion revealed liver dullness, no dullness in the sloping areas of the abdomen. Intestinal peristalsis is auscultated. Stool is spontaneous, acholic. Urine is dark. Examination: blood test: Hb-118 g/l, erythr. - 3.9x10 12 /l, leukocytes - 9.8x109 /l, serum - 80%, eosinophils - 7%, bases - 2%, lymphocytes - 10%, monocytogenes - 1%. Total bilirubin - 147.4 u/l, direct - 54.5 u/l, AST - 68.5 u/l, ALT - 52.1. ECG - sinus tachycardia, left ventricular hypertrophy. On ultrasound, in the right lobe of the liver in the projection of the V and VIII segments there is a formation with uneven contours, measuring 5.0 x 4.0 cm. The gallbladder is 11.0 x 4.0 cm, in the cavity there are stones up to 5 mm in size, the common bile duct is 1.0 cm (Fig. 1).

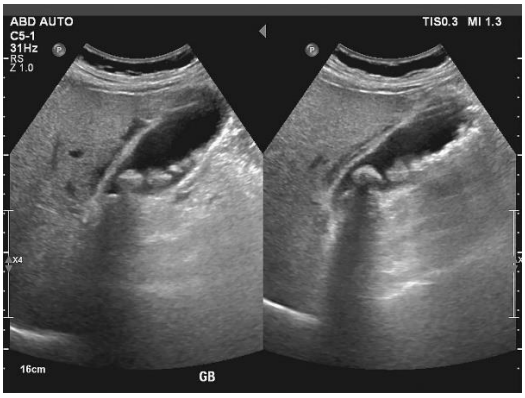

Fig. 1. Ultrasound of the gallbladder

Chest and abdominal X-rays were unremarkable. On May 3, 2023, the patient underwent ERCP, which revealed a dilation of the common bile duct to 12 mm. A 1.0 cm endoscopic spinal tap was performed, which revealed bile duct obstruction of parasitic etiology (Fasciola hepatica) and cholangitis. Three worms up to 3 cm long were detected on the first attempt (Fig. 2).

Fig. 2. Fasciola hepatica extracted from the common bile duct.

Subsequently, against the background of ongoing antibacterial therapy, which included intravenous infusions of metronidazole and cefotaxime, the patient's condition significantly improved. A control ultrasound of the bile ducts dated 06.05.2023 revealed common bile duct 8 mm, a space-occupying lesion in the projection of segments V and VIII of the liver with a decrease, measuring 3.0 x 2.0 cm. Dynamic blood biochemistry: total bilirubin 46.7 u/l; direct - 21 u/l; AST - 31.0 u/l; ALT - 44.0. The patient was discharged for outpatient treatment in satisfactory condition.

The extract from the medical history below indicates the need for a complete routine examination of patients even in the absence of clinical signs of mechanical jaundice.

Patient G., 38, was hospitalized. She presented with complaints of pain in the right hypochondrium, radiating to the right subscapular region, nausea, dry mouth, and general weakness. Her medical history included a 7-hour illness, nausea, and a single episode

of vomiting that did not provide relief. This was followed by pain in the right hypochondrium radiating to the right interscapular region. This was the first such attack. She had suffered from cholelithiasis for 10 years. She had not reported any mechanical jaundice.

On admission, the general condition is moderate. The skin and sclera are of normal color. The peripheral lymph nodes are not enlarged. Vesicular breathing in the lungs is on both sides. Heart sounds are muffled and rhythmic. Pulse is 88 beats per minute, with satisfactory volume and tension. Blood pressure is 130/80 mmHg. The tongue is moist, coated with a white coating. The abdomen is not distended, it participates in the act of respiration evenly. On palpation, the abdomen is soft, with tenderness in the right hypochondrium. The gallbladder is not palpable. Ortner's and Murphy's symptoms are negative. Shchetkin-Blumberg's symptom is negative. The liver and spleen are not enlarged. Percussion reveals preserved hepatic dullness, no dullness in the sloping areas of the abdomen. Intestinal peristalsis is auscultated. Percussion on the lumbar region is painless on both sides. Stool and diuresis are normal. The patient was examined. In the blood tests: Hb - 128 g / l, leu. - 4.2x10 9 / l, s / y - 60, eosinophils - 11%, bases - 3%, lymph. - 22%, mon - 4%. Urinalysis - unremarkable. Blood biochemistry: total bilirubin - 10.0, direct - abs, ALT - 26.1 u / l, AST - 24.1 u / l. Ultrasound: gallbladder 6.8 x 2.8 cm, walls 0.4 cm, putty-like contents, stones up to 1.4 cm in the cavity, common bile duct 0.9 cm.

Chest and abdominal cavity radiography reveal no abnormalities. ECG shows sinus rhythm and signs of left ventricular hypertrophy. The patient underwent retrograde cholangiopancreatography, which revealed dilation of the common bile duct to 10 mm, and endoscopic spinal tapping. The Fasciola hepatica worm was removed from the common bile duct using a Dormia basket. The patient received antibacterial therapy (metronidazole, cefazolin). On the 3rd day after the procedure, an ultrasound check was performed: the gallbladder is 6.2 x 2.8 cm, with a calculus in the cavity. The common bile duct is 0.8 cm. There are no calculi in the common bile duct. The general condition is satisfactory. Complaints of general weakness. The skin and sclera are of normal color. Blood tests at discharge: leukocytes 8.6x109 /l, s/y - 78%, lymph. - 20%, mon. - 2%. The patient was discharged in satisfactory condition for further outpatient treatment with recommendations for taking triclabendazole.

CONCLUSIONS

Analysis of the case histories presented, as well as that of other patients in this group, reveals the following patterns. First, all patients in this group lived in rural areas, which further underscores the need for enhanced public health education and improved hygiene literacy. Second, all patients in this group were diagnosed with cholelithiasis, which certainly supports the literature on the existence of a cause-and-effect relationship between the parasite and the host at the organismal and cellular levels. Treatment of these patients utilized minimally invasive interventions without the use of traumatic surgical techniques, which significantly reduced both the length of stay (average hospital stay 4.7 ± 1.4 days) and the cost of treatment. Thus, targeted retrograde biliary examination is not only a highly specific diagnostic but also a therapeutic method, allowing for the elimination of the cause of obstructive jaundice, adequate sanitization of the biliary tree, and the reduction of the risk of postoperative complications. The introduction of minimally invasive procedures into daily practice has enabled specialists to achieve a high level of professionalism. The choice of comprehensive diagnostic and treatment strategies for this category of patients allows for adequate and timely emergency care and reduces the cost of their postoperative rehabilitation.

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