

CASE STUDY

A CLINICAL CASE OF COEXISTENT PARASITIC LIVER AND GASTRIC LESIONS CAUSED BY CLONORCHIASIS

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Vladimir Belokonev¹, Andrei I. Gritsaenko², Alexey Nikolaev³, Tatiana Larina³¹ SAMARA STATE MEDICAL UNIVERSITY, SAMARA, RUSSIA² LLC "MMC" PREVENTIVE MEDICINE", UFA, RUSSIA³ N.I. PIROGOV SAMARA CITY CLINICAL HOSPITAL, SAMARA, RUSSIA

ABSTRACT

Clonorchiasis is a parasitic disease caused by *Clonorchis sinensis*. Parasite colonies can develop not only in the bile and pancreatic ducts but also in the gastric wall. This is confirmed by the described clinical case of perforated gastric ulcer, the morphological study of which revealed parasite colonies in the wall of the organ.

KEY WORDS: *Clonorchis sinensis*, perforated gastric ulcer, liver abscess

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INTRODUCTION

Clonorchiasis is a helminthiasis from the group of trematodes, caused by the Chinese liver fluke, *Clonorchis sinensis*, belonging to the phylum Platyhelminthes (flatworms). It has an elongated body 10–20 mm long and 2–4 mm wide. The known foci of clonorchiasis in Russia are located in the Amur River basin. To date, the real level of its incidence in the population has not been established. According to the data of Far Eastern scientists, two cases of clonorchiasis were registered in the Khabarovsk Krai in 2017, and no patients with this pathology were identified in 2018. The incidence rate was 0.15 per 100 thousand population, which is at the level of 2016 (2015 – 7 cases, 0.52 per 100 thousand population) [1-3]. At the early stage of parasite invasion, clinical manifestations are absent, and at the chronic stage, symptoms are non-specific and varied, therefore, the appearance of complaints in a patient is regarded as a consequence of diseases with a different etiology, and a special parasitological examination is rarely performed [4]. According to the literature, the incubation period of *Clonorchis sinensis* is on average 2-3 weeks. Although helminths are localized only in the liver and sometimes pancreatic ducts, trematodes can affect other abdominal organs. The main marker of the disease manifestation is chronic proliferative cholangitis and canaliculitis of the pancreas with the development of fibrosis in these organs and involvement in hyperplastic and inflammatory-sclerotic processes of the wall of the ampulla of the major duodenal papilla, the mouth of the main pancreatic duct, the terminal portion of the common bile duct and the cystic duct, similar to *Echinococcus* [5, 6].

Taking into account the fact that this disease is endemic and does not occur in most of the Russian Federation, and

that no similar cases were found in the available literature, it was decided to publish this clinical observation.

CASE STUDY

In the described case, the patient was admitted to the hospital on an emergency basis with symptoms of acute peritonitis, which was preceded by acute abdominal pain. Below is a clinical observation.

Patient V., 58 years old, unemployed, was taken by an ambulance to the N. I. Pirogov Samara City Clinical Hospital on November 17, 2017, at 11 a.m., with complaints of severe abdominal pain. According to his wife, since June 2017, he had been losing weight and got heartburn and skin yellowing episodes, accompanied by an increase in body temperature to 38.7°C. Endoscopic fibrogastroduodenoscopy and ultrasound examination of the abdominal organs were not performed. On November 17, 2017, at 8 a.m., the patient suddenly developed an exacerbation of his abdominal pain, which had a persistent nature. After the basic examination program, the patient was admitted to the Surgical Department for emergency indications.

Blood test upon admission to the hospital: Hb – 111 g/l, RBC – 3.83×10^{12} /l, Ht – 32.1%, WBC – 10.2×10^9 /l, PLT – 432×10^9 /l. Urinalysis indicators were within the reference intervals. Biochemical blood test: glucose – 7.5 mmol/l, total protein – 65.90 g/l, total bilirubin – 27.3 μ mol/l, urea – 6.9 mmol/l, creatinine – 78.2 μ mol/l, AST – 33.00 U/L, ALT – 17.70 U/L, amylase – 76.0 U/L. Hemostasis test: PT – 13.50 s, INR – 1.23, PR – 73.00%, PTT – 26.90 s, fibrinogen – 6.71 g/l. Abdominal ultrasound showed free fluid under the liver, spleen, and small pelvis. In the liver

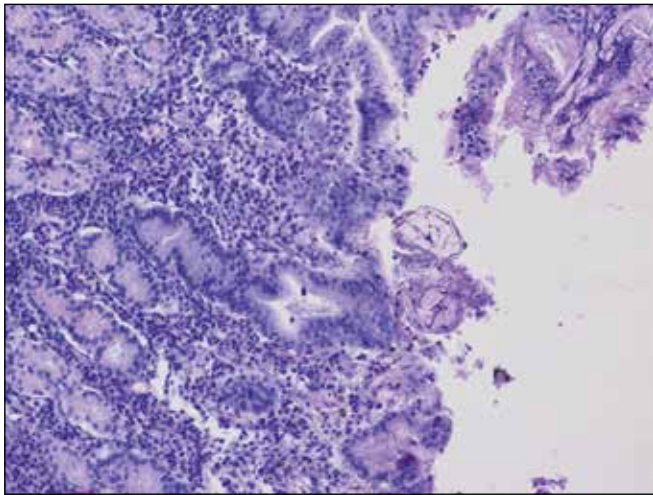


Fig. 1. Gastric mucosa, with helminth larvae lying among the gastric glands on its surface (hematoxylin and eosin staining, X 200)

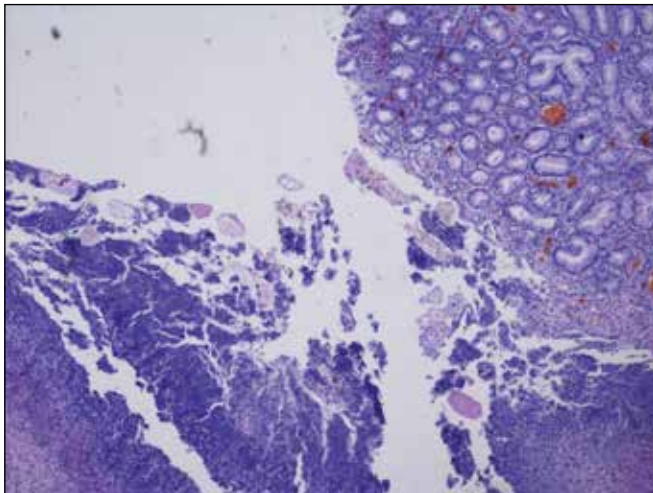


Fig. 2. Helminth larvae lying among the necrotic tissue on the surface of the gastric ulcer bottom (hematoxylin and eosin staining, X 150)

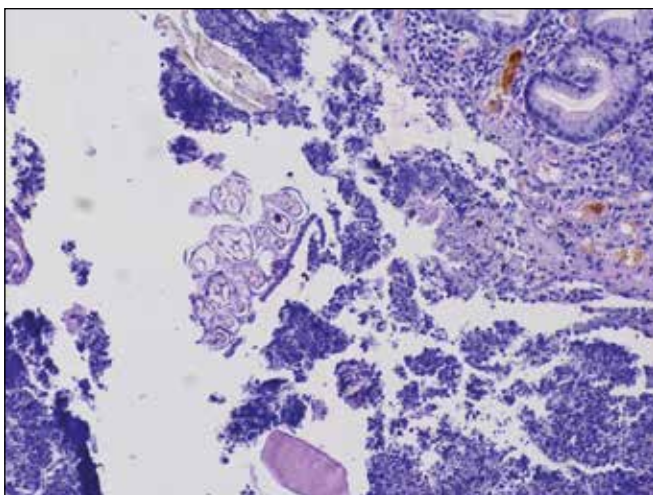


Fig. 3. Accumulation of helminth larvae along the gastric ulcer edge (hematoxylin and eosin staining, X 200)

projection, at the S IV-V border, there was a hypoechoic mass of fluid density with a clear contour, 4X3X5 cm in size. No other pathology was identified.

EGD results: there were food residues and stagnation in the stomach; an extensive mucosal defect up to 10 cm in size was revealed on the anterior and posterior walls. On the lesser curvature, there was an area suspicious for a perforated hole. Plain abdominal radiography in a sitting position revealed free gas (“the air crescent sign”); no arches and levels of stagnant fluid in the intestine were found; the colon was filled with gases. The patient was given a preliminary diagnosis: primary disease – gastric ulcer; complications – space-occupying liver mass; secondary (associated) diseases – ulcer perforation, diffuse peritonitis.

Based on this, emergency surgical treatment was required for vital indications; the patient provided his informed voluntary consent for the operation.

Operation protocol: during laparotomy in all parts of the abdominal cavity turbid effusion with fibrin up to 500 ml was dried, taken for a culture test to identify the pathogen and determine sensitivity to antibiotics. A massive ulcerative infiltrate was found in the gastric body, penetrating into the body of the pancreas and the transverse colon, with a perforated opening on the anterior wall more than 3 cm in diameter. In the right lobe of the liver, a space-occupying mass up to 5 cm in diameter described earlier by ultrasound was revealed. It was punctured, and liquid pus obtained was taken for a culture test. The space-occupying mass was regarded as a chronic liver abscess. Considering the presence of diffuse peritonitis and a site of chronic inflammation in the liver, as well as the gigantic size of the perforated opening, which could not be closed, it was decided to perform a Billroth I resection of 2/3 of the stomach. The abscess was opened, with about 150 ml of pus being obtained, and drained with two silicone tubes through the counterpuncture on the right. To unload the bile ducts, the common bile duct was isolated, and cloudy bile with flakes was obtained. The duct was drained with a T-shaped drainage tube according to Keru, and the common bile duct opening was closed with a continuous suture. Lavage and drainage of the abdominal cavity was performed. The resected part of the stomach was sent for postmortem examination.

Histological conclusion. The gastric wall had chronic inflammation, severe fibrosis, areas of granulation tissue and massive inflammatory infiltration of all layers with a significant number of eosinophils; in the mucosa, there were zones of necrosis with the inclusion of helminth fragments; from the serosa side, there were fibrin, white blood cells and single helminth fragments [Fig. 1-3]. On the upper line of the gastric resection, there were fibrosis and granulation tissue with pronounced inflammation.

The postoperative period was uneventful, without dyspeptic disorders [7-11]. The patient began to gain weight and acquired an appetite. Subfebrile temperature and leukocytosis remained up to $15.2 \times 10^9/l$. A stool test revealed no helminth eggs; there were protozoans – amoeba cysts. An additional study of feces by immunochromatographic methods did not reveal antigens to entamoebas. In a blood test for the helminth complex by ELISA, antibodies to *Clonorchis sinensis* (a strong positive result of 1:800) were de-

tected, and a controversial result of *Echinococcus* antibodies was obtained. Despite the fact that no convincing evidence was found for *Echinococcus* intraoperatively and histologically, the patient was additionally prescribed albendazole according to the schedule. Against this background, by the 14th day, white blood cells decreased to $5.6 \times 10^9/l$, and body temperature returned to normal. Drainage of the common bile duct was removed after 2 days of clamping. The patient was discharged for outpatient treatment in a satisfactory condition.

Clinical diagnosis: Chronic giant ulcer of the lesser curvature of the stomach with exacerbation and perforation. Peritonitis. Helminthiasis. Abscess of the right lobe of the liver.

In the described clinical observation, as a result of parasite invasion into the gastric wall, an ulcerative infiltrate was formed, complicated by perforation, which made the patient seek medical attention. When analyzing the literature, no reports were found on such a treatment option of parasitic lesion. Liver abscess was found incidentally. A very important objective confirmation of the connection of the disease with *Clonorchis sinensis* was formed by morphological studies of the removed part of the gastric walls, in which parasite colonies and larvae were clearly visible. Finally, a blood test for the helminth complex by ELISA, in which antibodies to *Clonorchis sinensis* were detected, also indicated the accuracy of the diagnosis. However, the question arises whether such a disease could have been diagnosed in the patient before the operation. From our point of view, it could not, because the pathology is very rare, there is very little epidemiological information, and the complication that arose required an urgent decision to treat the patient.

CONCLUSIONS

With a disease caused by *Clonorchis sinensis*, parasite colonies can develop not only in the bile and pancreatic ducts but also in other organs of the gastrointestinal tract.

Clinical diagnosis of *Clonorchis sinensis* is difficult due to the non-specificity of the symptoms characterizing the disease.

The diagnosis of *Clonorchis sinensis* can be established by a morphological study of the stomach resected for a developed complication.

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ORCID and contributionship:

Vladimir Belokonev: 0000-0002-4625-6664 ^{B,D,F}
 Andrei I. Gritsaenko: 0000-0001-7641-6975 ^{A,F}
 Alexey Nikolaev: 0000-0003-2063-3457 ^{B,C,E,F}
 Tatiana Larina: 0000-0003-4087-7723 ^{B,C,E,F}

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The Authors declare no conflict of interest.

CORRESPONDING AUTHOR

Andrei I. Gritsaenko

LLC "MMC" Preventive Medicine"

18 Aurora St., 450000 Ufa, Russian Federation

tel: +7(347)225-15-61

e-mail: phdresearch@mail.ru

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