ECRONICON OPEN ACCESS

EC GASTROENTEROLOGY AND DIGESTIVE SYSTEM

Research Article

The Role of Ultrasonography in Diagnosis of Liver Peliosis

Damesh Orazbayeva, Zhakupova Ayagul, Sarsekeyeva Assem*, Tusupbekov Gulmira, Saidahmetova Zulaykho, Kozybaeva Zhanat and Absatova Saule

Corporate Fund "UMS" Nazarbayev University - Joint Stock Company National Scientific Center for Oncology and Transplantation, Astana City, Republic of Kazakhstan

***Corresponding Author:** Sarsekeyeva Assem, Corporate Fund "UMS" Nazarbayev University - Joint Stock Company National Scientific Center for Oncology and Transplantation, Astana City, Republic of Kazakhstan.

Received: July 21, 2020; **Published:** September 30, 2020

Abstract

Background: Liver pelosis is a rare benign and tumor-like lesion of liver.

The Purpose of Study: To present the opportunities of ultrasound diagnosis of liver pelosis, a differential diagnosis of pelosis from other focal liver lesions.

Materials and Methods: The case of a clinical diagnosis of liver pelosis using ultrasound (ultrasound), computed tomography, biopsy and diagnostic laparoscopy.

Results: Qualified ultrasound research using auxiliary diagnostic methods (ultrasound dopplerography, elastography) allowed to correctly interpret data of the study and to assume the patient has liver peliosis.

Conclusion: Complex ultrasound research in process of diagnosis of focal liver lesions with the use of auxiliary methods is a reliable, the most affordable and low-cost diagnostic method.

Keywords: *Ultrasonography of Peliosis Hepatic*

Introduction

Peliosis of the liver is a rare benign disease. To date, according to WHO, liver peliosis in the world ranks 40th among liver diseases. More often men aged 60 - 64 and women aged 55 - 59 are affected. The diagnosis was confirmed to 1,452,894 people, including 789,810 men (55%), 663,084 women (45%). Mortality is 0.03% for men and 0.02% for women.

Peliosis of the liver is characterized by the presence of tumor-like formations in the liver, represented by cavities filled with blood. The sizes of the cavities can be of various diameters, from small to large, communicating with sinusoids and lined with hepatocytes or endothelial cells. These changes can also occur in other organs: spleen, lungs, kidneys, lymph nodes, bone marrow, but much less frequently. Peliosis, most often asymptomatic, is detected by chance during examination. Cases of liver peliosis were described, accompanied by common manifestations such as hepatomegaly, ascites, portal hypertension, cholestasis, isolated cases of acute abdominal pain as a result of rupture of the capsule, with intraperitoneal bleeding or spontaneous intrahepatic hemorrhage [1]. The etiology and pathogenesis of liver peliosis are not fully understood. According to the literature, presumably the causes of liver peliosis can be long-term use of drugs,

hormonal drugs, contraceptives, anabolic steroids, cytotoxic drugs, tuberculosis, immunodeficiency states, exposure to gamma rays [2]. Ultrasound diagnostics of hepatic peliosis is characterized by the presence in the liver structure of chaotically located inhomogeneous cavity structures in combination with hypo- and anechoic cysts.

Purpose of the Study

To show the possibilities of ultrasound diagnostics of liver peliosis, differential diagnosis of peliosis from other focal liver lesions.

Ultrasound (US) picture is nonspecific and difficult to distinguish from similar changes in metastatic liver damage or multiple abscesses. The results of computed tomography (CT) and magnetic resonance imaging (MRI) with contrast are also ambiguous for interpretation. The diagnosis can only be verified histologically by liver biopsy, but this invasive manipulation in peliosis is fraught with a high risk of bleeding [3,4].

Materials and Methods

We present to your attention a clinical case of liver peliosis with the use of ultrasound examination (US), computed tomography and diagnostic laparoscopy in the diagnosis.

Results and Discussion

Patient M., born in 1995, applied to JSC "National Research Center of Oncology and Transplantology" in March and June 2016. From the anamnesis: he has been ill since October 2015, when he first came with complaints of nausea and discomfort in the right hypochondrium. Examined at the place of residence. Ultrasound conclusion: Hepatosplenomegaly. Polycystic liver disease.

CT conclusion from 14.11.2015: Hepatomegaly. Hepatic vein thrombosis. Symptom Budd - Chiari malformation. Was observed by a gastroenterologist.

In March and June 2016. an ultrasound scan was performed at the National Scientific Center of Oncology and Transplantology. According to the ultrasound data: the liver is significantly enlarged, extends to the small pelvis. Diffuse - focal heterogeneity, the entire liver parenchyma is represented by multiple hypoechoic foci merging with each other in some with a minimal fluid component, with multiple scattered microcalcifications. Elastography technology was performed on the liver area in the pelvic area, the lesion data were mapped with a 3-color type of mapping, mainly green, typical for soft - elastic lesions (benign lesions).

Conclusion of ultrasound: Diffuse - focal lesion of the liver, against the background of severe hepatomegaly with spread to the small pelvis and subphrenic space. Ultrasound data is more for a benign change in chronic diseases, peliosis is not excluded. Splenomegaly with signs of portal hypertension due to compression of the splenic vein in the distal segment (Figure 1 and 2).

Figure 1 and 2: *Sonogram of liver peliosis.*

The patient was consulted by the hepatologist of the clinic, with further examination by the clinic's specialists objectively: normosthenic physique, height 186 cm, weight 84 kg. Peripheral lymph nodes are not enlarged. There are no peripheral edema. The abdomen is painless on palpation. The liver is enlarged by palpation, the lower border is palpable at the level of the iliac crest on the right, painless. The spleen is percussion enlarged by 3 cm, painless by palpation. Laboratory data: Complete blood count: Hemoglobin 107 g/l; Platelets 300 x 10/9; Leukocytes 2.9 x 10/9; ESR 5 mm/hour. Biochemical blood test: Total protein 78 g/l; Creatinine 57 μmol/L; Cholesterol 3.88 mmol/L; Glucose 4.1 mmol/L. Total bilirubin 16.4 μmol/l; ALT 60.3 U/l; AST 5 U/L. PTI coagulogram 79.1%; Fibrinogen 1.0 g/l L; APTT 30.9 sec.; ED 12.8 sec. INR 1.09. Protein fractions of albumin, (%) Albumin 53, Alpha1 - 6.2; Alpha2 - 9.9; Beta1 - 6.7; Beta2 - 5.3; Gamma 18.9.

At CT OBP September 2016 with intravenous bolus contrast enhancement (Ultravist 300-100). On the obtained CT images, the liver is enlarged, the dimensions are 28.8 x 13.4 x 34.1 cm, the lower edge is in the bladder region, the contours are even, the densitometric parameters of the parenchyma are within + 39 units. The structure of the liver parenchyma in the native phase is heterogeneous, due to multiple hypodense areas and calcifications, with contrast enhancement: in the arterial phase, there are multiple globular accumulations of a contrast agent, which is characteristic of vascular structures; in the portal phase, centripetal or centrifugal contrast enhancement is visualized without deformation of adjacent vessels. In the delayed phase, all hyperdense areas are iso- and hypodense. Intrahepatic and extrahepatic bile ducts are not dilated. Also, in the right lobe of the liver, a hypodense area is visualized, with clear, uneven contours, 1.2 x 1.6 cm in size, with a density of up to (-88 units). With SCT angiography: common hepatic artery with a diameter of 0.6 cm; diameters: RHA -0.36 cm, LHA 0.24 cm, A - type 1, PV - type 1, HV branches are not clearly visualized. Inferior vena cava with a diameter of 2.1 cm. The portal vein is 1.2 cm in diameter at the level of the main trunk. The splenic and superior mesenteric veins are patent, with a diameter of 1.0 cm and 0.8 cm, respectively. Lymph nodes of the abdominal cavity and retroperitoneal space are not enlarged. On CT angiography, the abdominal aorta, celiac trunk, mesenteric arteries, and renal arteries are differentiated, filled with a contrast agent throughout without signs of stenosis and occlusion. Conclusion: CT signs of peliotic hepatitis, hepatosplenomegaly (Figure 3).

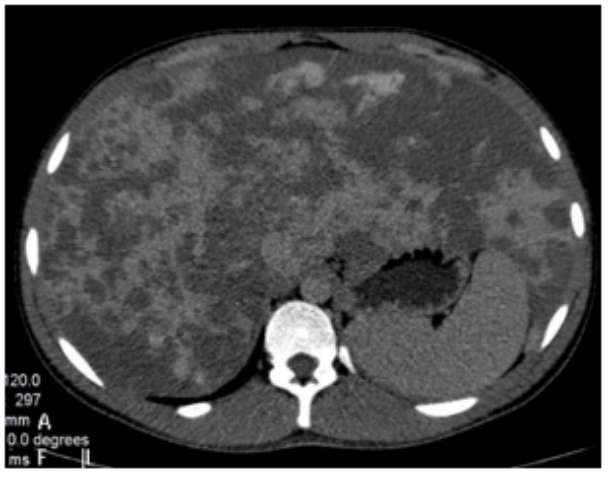

Figure 3: *CT scan of liver peliosis.*

The specialists of the clinic carried out a differential diagnosis with congenital polycystic liver disease, benign liver formation, peliosis. The ultrasound picture of polycystic liver disease is characterized by the presence of homogeneous echo-negative fluid cavities of various diameters, in this case, during ultrasound, the entire liver parenchyma is represented by multiple hypoechoic foci, merging with each

other and with the presence of a minimal fluid component in some of them, which made it possible to immediately exclude polycystic liver disease, and the absence pathology of the hepatic veins during ultrasound Doppler studies - to exclude Budd-Chiari syndrome. Differential diagnosis in relation to tumor and metastatic liver damage according to ultrasound, namely: the presence of clear encapsulated contours of the formations, the absence of pathological neovascularization during extended.

Ultrasound dopplerography, obtaining, with ultrasound elastography of the liver, mapping characteristic of soft-elastic formations without increasing the coefficient - allowed us to assume a benign liver damage, possibly peliosis.

As a result of clinical and outpatient examinations, the more likely diagnosis is liver peliosis. To verify the diagnosis, it was decided to conduct a liver biopsy under ultrasound control. During biopsy, due to the peculiarities of the restructuring of the liver parenchyma, obtaining an adequate column of hepatic tissue for cyto- and histological examination in this patient turned out to be difficult. A control ultrasound scan after performing a biopsy revealed the presence of free fluid in the abdominal cavity in a volume of up to 500 ml, presumably - blood with clots. The patient was urgently examined together with the specialists of the clinic and, given the presence of signs of intra-abdominal bleeding, according to vital indications, a laparotomy was performed within an hour. During laparotomy, macroscopically significant hepatomegaly was observed, the liver had a purple-red color, the tissue was flabby to the touch, easily wrinkled with fingers (Figure 4).

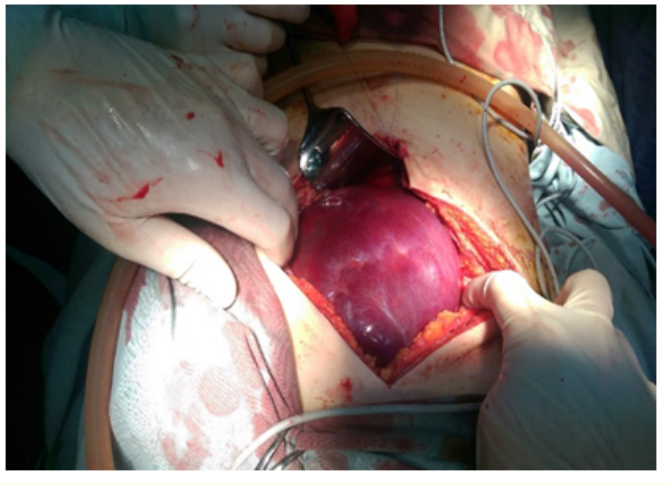

Figure 4: *Photo of the liver during laparotomy.*

After finding the puncture hole of the liver, suturing was performed, ensuring adequate hemostasis. Given the risk of liver bleeding, it was decided to refrain from intraoperative liver biopsy. The clinic's specialists consulted this patient with the leaders of the Syzganov Institute in the city of Almaty, with foreign partners of the clinic - SNUH (Seoul, South Korea), the 9th city hospital in Minsk (Belarus), N. Sklifosovsky (Moscow, Russia) to assess the risks and the need for liver transplantation. As a result of a joint consultation with specialists from the city of Almaty and foreign specialists, it was recommended to make sure that the IVC is patented and the Budd-Chiari syndrome is excluded.

Expert ultrasound and Doppler studies, MRI of the abdominal cavity with intravenous contrast enhancement on a device of at least 1.5 Tesla, excluded damage to the hepatic veins and IVC, signs of Budd-Chiari syndrome. The MRI results were sent to Seoul, after receiving the opinion of the Seoul National Hospital specialists, the issue of liver transplantation will be re-examined. The patient was discharged from the hospital under outpatient supervision, continues to be under the supervision of a hepatologist.

Conclusion

Thus, this clinical case confirms the difficulty of diagnosing liver peliosis. The ultrasound picture and CT data are extremely nonspecific, which leads to difficulties in the differential diagnosis of peliosis. The patient did not have a history of long-term use of drugs, any immunodeficiency state, or chronic diseases that contribute to this disease. The presence of blood-filled cavities in the liver of varying degrees of density create a varied picture of tumor-like lesions, difficult to distinguish from metastatic, abscessing or cystic changes in the liver.

Our in-depth complex ultrasound examination using Doppler studies, ultrasound elastography allowed us to exclude polycystic liver disease, Budd-Chiari syndrome, with which the patient was observed at the place of residence, to exclude tumor lesions of the liver and to conclude a benign focal liver lesion, peliosis is not excluded. Thus, an ultrasound study in the diagnosis of focal liver lesions using auxiliary research methods is a reliable, most accessible and low-cost diagnostic method.

Bibliography

1. Charatcharoenwitthaya P and Tanwandee T. "Education and imaging: hepatobiliary and pancreatic: spontaneous intrahepatic hemorrhage from peliosis hepatis: an uncommon complication of a rare liver disorder". *Journal of Gastroenterology and Hepatology* 29.10 (2014): 1754.

2. Hidaka H., *et al*. "Peliosis hepatis disseminated rapidly throughout the liver in a patient with prostate cancer: a case report". *Journal of Medical Case Reports* 9 (2015): 194.

3. Chopra S., *et al*. "Peliosis hepatis in hematologic disease. Report of two cases". *Journal of the American Medical Association* 240.11 (1978): 1153-1155.

4. Fidelman N., *et al*. "SCVIR 2002 Film Panel Case 4: Massive intraperitoneal hemorrhage caused by peliosis hepatis". *Journal of Vascular and Interventional Radiology* 13.5 (2002): 542-545.

Volume 7 Issue 10 October 2020