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CASE REPORT / ПРИКАЗ БОЛЕСНИКА

Not so innocent bystander – gallbladder varices without portal vein thrombosis

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SUMMARY
Introduction Gallbladder varices (GBV) represent a rare form of ectopic varices that usually occur in patients with portal hypertension and portal vein thrombosis.
Case outline We present a case of a 38-year-old woman with decompensated autoimmune liver cirrhosis who was referred to our institution for evaluation for liver transplantation. She was incidentally discovered to have GBV during a routine B-mode abdominal ultrasonography as part of pre-transplant evaluation. GBV were confirmed by the Color Doppler Sonography, and multi detector computed tomography angiography. Interestingly, portal vein was patent and without thrombus.
Conclusion Despite being asymptomatic in most cases, the presence of GBV is valuable information for a surgeon because they might be a source of potentially catastrophic bleeding, which is particularly poorly tolerated by patients with decompensated liver cirrhosis. Ultrasound has the irreplaceable role not only in discovering GBV, but in prompt diagnosis of rare, but unpredictable and fatal complications as well.
Keywords: gallbladder varices; ectopic varices; portal hypertension

INTRODUCTION

Gallbladder varices (GBV) are rare form of ectopic varices that usually develop in patients with portal hypertension. They represent a form of portosystemic shunting that occurs between the portal vein through the cystic vein branches, and the veins of the anterior abdominal wall [1]. Hence, it is of no surprise that the gallbladder is directly affected by portal hypertension. Portal hypertension may lead to the gallbladder wall thickening secondary to impaired venous drainage. GBV occur with incidence of 12–30% in patients with portal hypertension, are usually associated with portal vein thrombosis (PVT) and are characteristic feature of portal biliopathy [2, 3]. Most of the time they are asymptomatic but their spontaneous bleeding results in hemobilia, recurrent gastrointestinal bleeding or even gallbladder perforation and hemoperitoneum [4].

We present a case of a patient with decompensated liver cirrhosis secondary to autoimmune hepatitis who was diagnosed with GBV during routine abdominal ultrasonography as a part of pre-liver transplant evaluation. The diagnosis was confirmed by the Color Doppler Sonography and abdominal Multidetector computed tomography.

CASE REPORT

A 38-year-old female patient was referred to the Clinic for Gastroenterology and Hepatology of the Clinical Center of Serbia for transplant evaluation due to end stage liver disease secondary to autoimmune hepatitis. She was diagnosed with decompensated liver cirrhosis seven years prior to her current hospitalization and since then she has been admitted several times due to the various complications of end stage liver disease, such as recurrent ascites, jaundice, hepatic encephalopathy, and recurrent gastrointestinal bleeding. During the last admission she had gastrointestinal bleeding and upper esophagogastroduodenoscopy showed grade III varices with "red cherry spots" which were successfully treated by band ligation. Due to worsening Model of End Stage Liver Disease score of 24, she was a transplant candidate. On admission, the patient was hemodynamically stable, without fever or leukocytosis. Her abdomen was distended but non-tender with palpable splenomegaly and positive fluid shift. Cardio-pulmonary exam was unremarkable and skin showed evidence of telangiectasia. Neurological exam was non-focal, and there was no encephalopathy. Pre transplant evaluation included routine abdominal ultrasonography that revealed an enlarged, nonhomogeneous liver with massive splenomegaly of 250 mm in craniocaudal diameter, as well as circular

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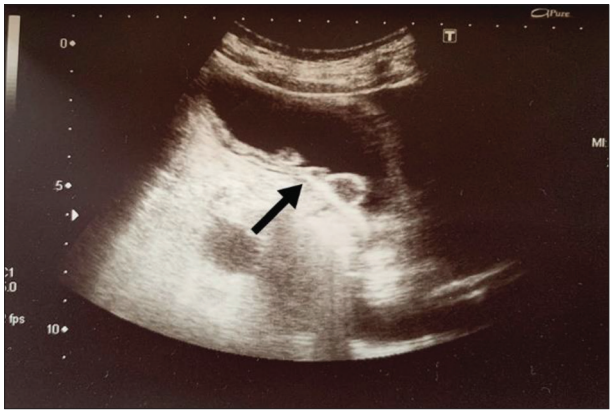

Figure 1. Gallbladder varices on B mode ultrasound

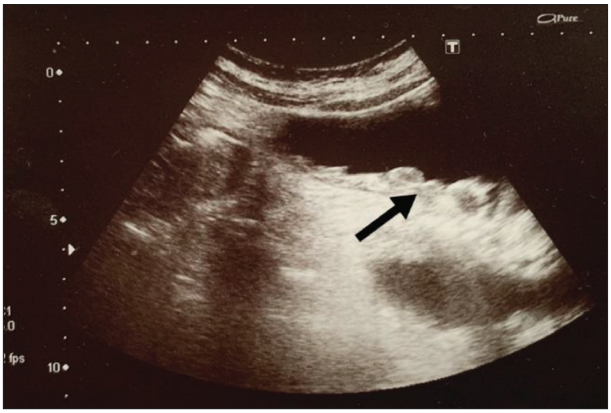

Figure 2. Gallbladder varices on B mode ultrasound

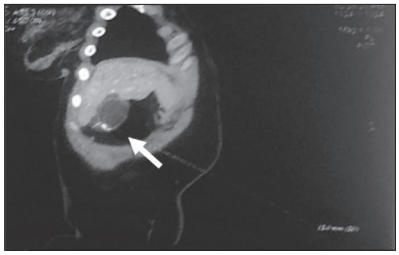

Figure 3. Delaminated gallbladder wall on abdominal multidetector computed tomography

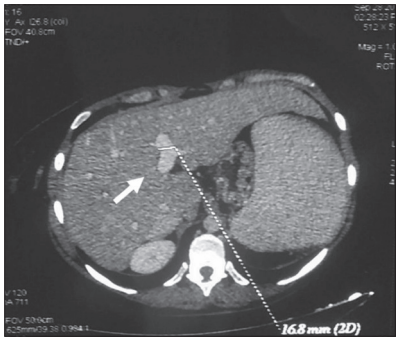

Figure 4. Dilated portal vein branch on abdominal multidetector computed tomography

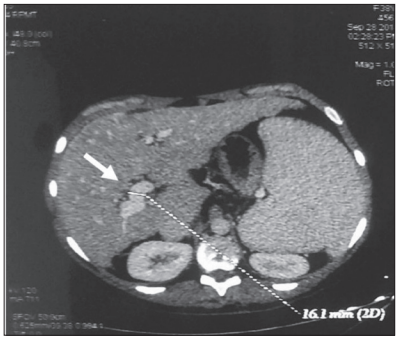

Figure 5. Dilated portal vein branch on abdominal multidetector computed tomography

changes in the gallbladder wall. Doppler sonography of portal system confirmed GBV, however, without a PVT (Figures 1 and 2). Multidetector computed tomography angiography of the abdomen confirmed a thickened and delaminated gallbladder wall with GBV as well as dilated, but patent portal vein without thrombosis (Figures 3, 4, and 5).

DISCUSSION

Ectopic varices represent dilated splanchnic veins, or dilated portosystemic collaterals, which occur along the entire gastrointestinal tract outside the common variceal sites such as gastroesophageal varices and internal hemorrhoids [2]. GBV are a form of ectopic varices seen as a complication of portal hypertension. They consist of enlarged blood vessels in the gallbladder wall or gallbladder fossa, and represent a portosystemic shunt between the cystic branches of the portal vein and the systemic veins of the anterior abdominal wall [1, 2, 3]. The incidence is similar in adult and pediatric population with portal hypertension, estimated to be up to 30% [4]. The majority of patients with GBV also have PVT, however, as our case illustrates, they might develop even in the absence of PVT. The gold standard for diagnosis is the Color Doppler Sonography, which shows the varices as venous flow in the delaminated and thickened parts of the gallbladder wall [3, 5]. If feasible, contrast-enhanced ultrasound can be a valuable further diagnostic tool, while computed tomography scan and magnetic resonance appear to be less sensitive compared to ultrasound.

It is important to consider other etiologies that might mimic GBV and present similarly. These etiologies are more common than GBV and include acute or chronic cholecystitis, gallbladder cancer and porcelain gallbladder to name a few. The absence of mineralization and the presence of vascular enhancement rules out porcelain gallbladder, while the absence of pericholecystic fluid and inflammation make cholecystitis unlikely. A gallbladder cancer can present radiologically in similar fashion, but one would expect to see some degree of local soft tissue invasion or presence of metastatic lesions, which were absent in our case. In spite of their ability to affect the contractility of the gallbladder they are not associated with higher risk for development of cholelithiasis [6]. When present, GBV may cause hemobilia, intra-abdominal hemorrhage, or rupture of the gallbladder as illustrated in several case reports [7]. Ultrasound has the irreplaceable role not only when discovering GBV, but in prompt diagnosis of the rare, but unpredictable and fatal complications as well. [8]. Despite being rare, GBV are the potential cause of detrimental gastrointestinal hemorrhage. The bleeding from GBV is serious because as population with portal hypertension and decompensated cirrhosis tends to be sick and poorly tolerates hemodynamic protuberances. Our case illustrates a rare entity, which should be considered in any patient with planned abdominal surgery, particularly those with

portal hypertension who have increased incidence of GBV. While they usually develop concomitantly with PVT, GBV might be isolated and occur in the absence of PVT, as we have shown in this report.

Considering high availability and low-cost of the color Doppler sonography, which is considered a gold standard for GBV diagnosis, there is no reason for careful evaluation of gallbladder not to be done in every patient with portal hypertension. If GBV are discovered, surgical team should be informed, as it is pertinent information in planning and executing abdominal surgeries. By increasing awareness of this rare portosystemic shunt, we can prevent or decrease the incidence of massive bleeding from GBV, which in turn will decrease perioperative mortality [7–11].

Ethical standards: All procedures performed in studies involving human participants were done in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Written consent to publish all shown material was obtained from the patient.

Conflict of interest: None declared.

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Не баш безазлени посматрачи – варикси жучне кесе без тромбозе портне вене

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САЖЕТАК

Увод Варикси жучне кесе (ВЖК) ретка су форма ектопичних варикса код болесника са портном хипертензијом и тромбозом портне вене.

Приказ болесника Приказујемо болесницу стару 38 година, са декомпензованом цирозом јетре на терену аутоимунске болести, која је упућена нашој клиници ради процене за трансплантацију јетре. ВЖК су уочени током извођења рутинског ултразвучног прегледа абдомена (Б-мод) у склопу претрансплантационе припреме. Њихово присуство потврђено је ултразвучним прегледом колор доплером и мултидетекторском компјутеризованом томографском ангиографијом, при чему је портна вена била проходна, без присуства тромбних маса.

Закључак Иако су често асимптоматски, сазнање о присуству ВЖК је од непроцењивог значаја за хирурге, будући да могу бити узрок обилног крварења, које нарочито угрожава болеснике са декомпензованом цирозом јетре. Ултразвучни преглед има незамењиву улогу не само у детекцији ВЖК већ и у правовременој дијагнози претходно поменутих ретких али непредвидивих и фаталних компликација.

Кључне речи: варикси жучне кесе; ектопични варикси; портна хипертензија