Chronic Recurrent Biliary Ascites: An Unusual Scenario

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ABSTRACT

Biliary ascites in adults occurs most often as a complication of biliary procedures - endoscopic, radiologic or operative, but can occur after trauma as well. Once suspected, evaluation should include diagnostic paracentesis to determine the ascitic fluid bilirubin level as well as HIDA scanning or MRCP to rule out extravasation from the biliary tree. Treatment is directed primarily at surgical repair of the injury/defect or decompression of the biliary tree. To our knowledge, chronic recurrent painless slowly accumulating biliary ascites with no preceding history of biliary obstruction/surgery or trauma has never been reported before.

Keywords: biliary ascites, ascites

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Case Report

A 44-year-old Hispanic lady was admitted to the general medicine floor for recurrent painless abdominal distention. She gave a history of recurrent abdominal fluid collection for five years. She had therapeutic paracentesis performed every six months with drainage of green fluid at an outside hospital with no established etiology. Her past history was significant for infertility treated with laparoscopic lysis of adhesions nine years before presentation, which was complicated by injury to the iliac artery in the pelvis that was surgically repaired at the same time. She had two successful *in vitro* fertilizations four years apart and the ascites started three years after the second pregnancy. She had regular menstrual cycles, denied any history of trauma, other gastrointestinal complaints. Review of systems was otherwise unremarkable. She had no family history or risk factors for tuberculosis. On physical examination her vital signs were normal, chest was clear to auscultation, heart sounds were normal with no murmurs, rubs or gallops, a normal neurologic exam and no peripheral edema. The abdomen was soft, non-tender but clearly distended with no organomegaly but positive fluid thrill. A complete blood count, metabolic profile and liver function tests were normal. A CT scan of the abdomen showed ascites with normal liver, spleen, pancreas, biliary system, bowel

and pelvic organs and no abnormal masses anywhere. A carcinoembryonic antigen, CA-125 and CA19-9 tumor marker levels were normal. Acute and chronic hepatitis panel was negative. A total of 2.5 liters of ascitic fluid was drained and it was dark green in color (Figure 1, 2).

Figure 1: Green color ascites

Figure 2: Same drained ascites

Fluid analysis showed a low serum-ascites albumin gradient (SAAG) of 0.85 g/dL, total protein in the fluid of 4.6 g/dL, 247 white cells with 27% neutrophils, LDH 99 U/L (serum LDH 140 U/L) and fluid bilirubin of 1.4 mg/dL (serum total bilirubin of 0.5 mg/dL). Fluid cultures for bacteria, acid-fast bacilli and fungi were negative and the fluid cytology was negative for any malignant cells. Fluid smears were negative for mucin stain. An MRCP showed no pancreatobiliary ductal dilatation or leak. A HIDA scan did not show any evidence of a biliary leak, cholecystitis or common bile duct obstruction. A transvaginal ultrasound showed normal ovaries. After fluid drainage she felt better and was discharged with outpatient follow up. She visited her primary physician every 3 months and had recurrence of ascites that needed drainage 2-3 times a year and is doing well 3.5 years post presentation to us.

Discussion

Acute free escape of bile into the peritoneal cavity in adults generally is considered to be a serious situation with a high mortality rate, a condition known as bile peritonitis, occurring after spontaneous perforation of the gallbladder or hepatic ducts or occasionally after blunt trauma. However, a less symptomatic version, known as bile ascites, is most commonly a postoperative complication of biliary tract operations or trauma.^(1,2) Biliary procedures such as cholecystectomy, especially performed for acute cholecystitis, carry the greatest risk of biliary leak from the cystic duct or an unrecognized duct of Luschka with patients usually presenting with bile ascites or bile peritonitis within a week of the procedure.⁽³⁾ Bile ascites is associated with sterile peritoneal fluid whereas bile peritonitis can have bacterial growth on cultures in over 40%.⁽⁴⁾ Our understanding of the association of the bile salt concentration and bacteria in the development of bile peritonitis is still imprecise but the initial insult by the bile is chemical, followed by a secondary bacterial infection. The longer the period before the bile is drained, the higher the incidence of infection and the greater the likelihood that peritonitis will develop.⁽³⁾ Bile ascites has been reported usually in children and known to occur as a complication of rupture of congenital choledochal cyst or blunt trauma.⁽⁴⁾ In adults it is a predominantly surgical complication; however, the reports of large bile ascites with no signs of peritonitis are invariably due to bile leak from the biliary tree and treated with surgical repair in most cases.^(1,5)

Upon paracentesis the fluid may look green or brown, is exudative (serum-ascites albumin gradient <1.1 g/dL) and on biochemical analysis has a fluid to serum bilirubin ratio of >1 which is characteristic. Ascitic fluid

amylase and lipase should also be checked to evaluate for ascites secondary to pancreatitis.^(6,7) Hepatobiliary scintigraphy confirms that the intraperitoneal fluid is bile without the need for paracentesis and may show the site of perforation. It is a very useful noninvasive imaging modality and should be done in all suspected patients. It is also useful in the follow-up of treated patients to know the treatment response. Intraoperative cholangiography can also be done to confirm the diagnosis, document the site of perforation, and guide management.^(8,9) Treatment depends on the location of bile leakage and etiology. In our patient, no source of biliary leak was identified and work-up for malignancy or infective etiology was negative. She was followed clinically after paracentesis and continued to do well with no signs of peritonitis or reaccumulation at her last checkup.

Conclusion

Most cases of biliary ascites in adults develop due to biliary rupture or leakage. However, to our knowledge, our patient is the only reported case of chronic recurrent painless biliary ascites in an adult with no associated risk factors of trauma or biliary manipulation/obstruction.

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Hronični, povratni žučni ascit: neobičan scenario

SAŽETAK

Žučni ascit kod odraslih osoba najčešće se javlja u vidu komplikacija žučnih procedura – endoskopskih, radioloških ili operativnih, ali može se javiti i nakon traume. Čim se posumnja na žučni ascit, procjena bi trebala da obuhvati dijagnostičku paracentezu kako bi se odredio nivo bilirubina u ascitnoj tečnosti, kao i HIDA skeniranje ili MRCP, kako bi se isključila ektravazacija iz žučnog stabla. Liječenje je prvenstveno usmjereno na hiruršku korekciju povrede/nedostatka ili sniženje pritiska žučnog stabla. Koliko je nama poznato, hronični, povratni, bezbolni žučni ascit koji se polako nakuplja, pri čemu ne postoji prethodna istorija žučne opstrukcije/operacije ili trauma, nikada do sada nije prijavljen.

Ključne riječi: žučni ascit, ascit