Case Reports in Gastroenterology

Case Rep Gastroenterol 2011;5:223–226
DOI: 10.1159/000326998

Published online:
April 13, 2011

ISSN 1662–0631
www.karger.com/crg

An Obscure Case of Hepatic Subcapsular Hematoma

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Key Words
Liver · Hemorrhage · Coagulopathy

Abstract
Spontaneous liver bleeding is often reported in preeclampsia. It is otherwise rare and has been linked to gross anatomical lesions and coagulopathy. We report a case of subcapsular hematoma of the liver without any apparent lesion and in the absence of coagulopathy. A 41-year-old male, paraplegic for 16 years, presented to the emergency department 3 days after sudden onset of right upper quadrant and shoulder pain. He had been on vitamins and 5,000 units subcutaneous heparin 12-hourly at the nursing home for the last month. He was in no distress, afebrile, with stable vitals. Physical examination showed a diverting colostomy, tender hepatomegaly and sacral decubiti. A fecal occult blood test was negative. There was spastic paraplegia below the level of T12. Two days after admission, the patient was afebrile and hemodynamically stable. PTT, PT, liver profile, BUN and creatinine were all normal, however his hemoglobin had dropped from 11.3 to 7.6 g/dl. An abdominal CT scan revealed an isolated 9.0 × 1.8 cm subcapsular hematoma. The patient received blood transfusion in the intensive care unit and was discharged 7 days later. In conclusion, spontaneous liver hemorrhage occurs in the nonobstetrical population in the setting of gross anatomical lesions or coagulopathy. This is the first report of an isolated subcapsular liver hematoma.

Introduction

Liver bleeding in the absence of trauma has been linked to gross anatomical lesions. We report a case of spontaneous subcapsular hematoma of the liver without any apparent lesion and in the absence of coagulopathy.

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Case Report

A 41-year-old African-American male, paraplegic from a gunshot wound for 16 years, presented to the emergency room 3 days after sudden onset of dyspnea, right upper quadrant, shoulder and neck cramping pain worsened by body movements, and a tender mass in the right flank. The patient denied fever and acute anemia symptoms. He had been on vitamins, zinc sulfate, oxybutinin, and 5,000 units subcutaneous heparin 12-hourly at the nursing home for the last month. He tested negative for HIV and hepatitis B and C and denied using anabolic steroids. The patient was in no distress, afebrile, and had a pulse rate of 101 and a blood pressure of 130/85 mm Hg. On physical examination, no pallor or jaundice was noted. There was tenderness over the right trapezius muscle. Examination of the heart and lungs was normal. Mildly tender hepatomegaly was noted on a nondistended abdomen. A fecal occult blood test was negative. Stage 3 sacral decubiti, a functioning diverting colostomy, and an indwelling urinary catheter were present. There was complete spastic paraplegia below the level of T12. Laboratory results showed a hemoglobin of 11.3 g/dl, a white blood cell count of 9,500/μl and a platelet count of 248,000/μl. PTT and PT were 28 and 12 s, respectively. BUN, creatinine and liver profile were normal. Urinalysis was remarkable for leukocyte esterase and protein. The patient was started on ibuprofen, intravenous fluid and Unasyn to treat his infected decubiti and urinary tract infection.

Radiographs of the cervical spine and right shoulder were normal. A chest radiograph was unremarkable except for a bullet fragment overlying the left hemidiaphragm. A sonogram of the abdomen revealed a large liver 20 cm in height with an inhomogeneous ultrasound pattern suggestive of fluid accumulation.

Two days after admission, the patient was afebrile and hemodynamically stable with a mean pulse rate 85 and a mean arterial pressure of 103 mm Hg. However, he complained of persistent unchanged right shoulder pain. His hemoglobin had dropped to 7.6 g/dl. Two units of packed red blood cells were infused. An abdominal CT scan revealed a 9.0 × 1.8 cm inhomogeneous, dense fluid collection causing a concave indentation upon the right lobe of the liver (**fig. 1**). A small amount of ascites was noted in the pelvis and lateral to the spleen. The patient was treated conservatively in the intensive care unit. Another 3 units of packed red blood cells were given over the next 2 days. The patient remained stable for the next 7 days in the hospital. Prior to discharge, his hemoglobin was 13.1 g/dl, WBC 6,100/μl, platelets 310,000/μl, PTT 29.6 s and PT 12.9 s. A repeat abdominal CT showed a smaller subcapsular liver hematoma.

Discussion

A subcapsular hematoma of the liver is an accumulation of blood between Glisson's capsule and the liver parenchyma; rupture into the peritoneum has a 75% mortality rate [1, 2]. The hematoma is usually located around the right lobe of the liver (in 75% of patients). Spontaneous subcapsular hematoma occurs in pregnancy and is mostly associated with preeclampsia and the HELLP syndrome [3–5]. Risk factors in the general population are hemodialysis, warfarin treatment, benign and malignant liver tumors, peliosis hepatis, periarteritis nodosa and hepatic adenomatosis [6–10].

Our case is unique in that none of the above risk factors were present. Subcutaneous heparin (5,000 units 8- to 12-hourly for thromboembolic disease prophylaxis) has not been linked to internal hemorrhage [11]. Our patient tested negative for HIV. He had no history of anabolic steroids use to be at risk for peliosis hepatis, and his CT was not suggestive of this entity [8].

Subcapsular hematomas of the liver progress in two phases [12, 13]. Rupture of the hematoma is typically associated with signs of hemodynamic collapse. In women, liver capsule distension associated pain along with nausea, vomiting, anorexia, dyspnea, and pallor are very suggestive of the diagnosis in late pregnancy. However, in a male the correct diagnosis is usually made by imaging or during explorative laparotomy.

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CT better characterizes the fluid collection around the liver by determining its density and the presence of associated parenchymal hepatic lesions [14]. In our case, the high density of the fluid collection and the fall in hemoglobin without any exterior bleeding in a nonseptic patient suggested the diagnosis of a hematoma.

A contained hematoma in a stable patient is treated with fluid and/or blood transfusion [12, 13]. Serial imaging and hematocrits are obtained while the patient is monitored in the intensive care unit to determine the hematoma is not progressing. The prognosis of a nonruptured subcapsular liver hematoma is good [2, 9], as demonstrated here. Surgery is reserved for cases of impending rupture or ruptured hematoma [12].

Conclusion

Spontaneous liver hemorrhage, although rare in the nonobstetrical population, should be considered in the differential diagnosis of sudden-onset abdominal pain radiating to the shoulder associated with hepatomegaly with or without signs of shock. This is the first reported case of subcapsular liver hematoma in the absence of gross anatomical lesions and coagulopathy.

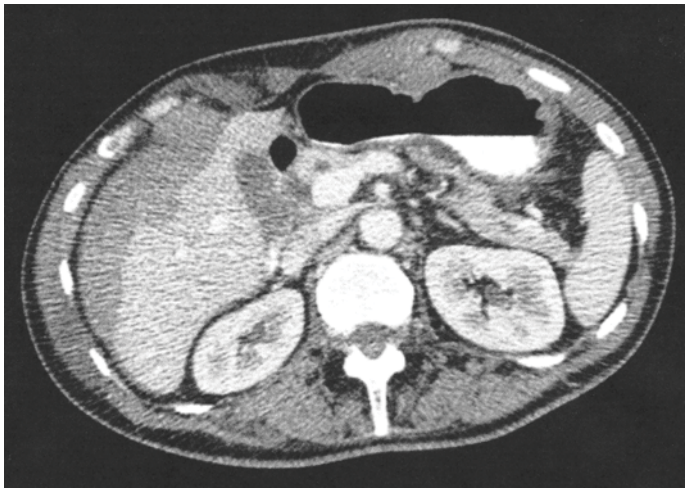

Fig. 1. CT of the abdomen/pelvis with intravenous contrast. Note the average density of 60 Hounsfield units for the fluid collection (subcapsular hematoma) by the right lobe of the liver; the liver density is about 80 Hounsfield units whereas the adjacent bile averages 29 Hounsfield units.

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