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An Unusual Cause Of Hepatic Rupture

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An Unusual Case of Hepatic Rupture  
By Minni Meka, Dhara Chaudhari, James Swenson

INTRODUCTION
The Liver is a highly vascular organ that is vulnerable to traumatic injury because of its size and the fixed position in the right hypochondrium (1). It is commonly injured during blunt abdominal trauma and penetrating abdominal injuries (2). We report a unique case of a patient who presented with hepatic rupture and formation of a biloma in the lesser sac following vigorous coughing.

CASE DESCRIPTION
An 83-year-old female with a history of chronic obstructive pulmonary disease presented with epigastric pain following an episode of a vigorous cough after exposure to dust. She also complained of nausea and vomiting. She denied hematemesis, melena or fever. Physical examination was significant for a heart rate of 102 beats/min, and blood pressure 109/56 mm, decreased breath sounds with bilateral wheezing, diffusely tender, distended abdomen with guarding but no rigidity. Laboratory data showed total bilirubin 4.5 mg/l, Aspartate transaminase 43 IU/l, Alanine transaminase 99 IU/l, alkaline phosphatase 136 IU/l, Serum lipase 51 U/l, negative hepatitis panel. Chest X-ray showed no rib fractures. Computed tomography (CT) revealed a large collection of fluid posterior to the stomach, no bowel perforation or cholecystitis. CT guided drainage showed bilious fluid. She was initially managed conservatively with the drain left in place but failed to improve. Endoscopic retrograde cholangiopancreatography (ERCP) showed an obvious leak of contrast material from the left lobe of the liver flowing and draining through the drain. Sphincterotomy and stent placement were done during ERCP with significant improvement in patient’s condition. Repeat Hepatobiliary (HIDA) scan after four weeks showed no bile leak and the stent was removed.

DISCUSSION
Hepatic laceration is often a fatal complication associated with various conditions such as trauma, pregnancy, anticoagulant therapy, connective tissue disorders, infiltrative liver diseases, hepatocellular carcinomas, and rarely amyloidosis (3,4). We present a unique cause of liver laceration in our case.

Patients with hepatic lacerations usually present with severe right upper quadrant pain, abdominal distention, guarding, acute anemia or hypotension. They may have associated right lower rib fractures or Kehr’s sign (right upper quadrant and shoulder tip pain) (5) Biliary tree disruption with formation of biloma and/or persistent bile leak is a frequent complication of non-operative management of liver injury. The incidence of bile leak ranges from 0.5 to 21 percent (6,7,8).

The suspicion of hepatic injury is raised from the presentation, physical examination, and laboratory findings. The imaging, usually CT of the abdomen definitively confirms the injury and defines the injury grade. (9) Liver injuries can be classified using widely accepted injury grading scale (2,10) developed by American Association of the Surgery of Trauma (AAST). This has grades I to VI ranging from capsular tear <1cm depth and subcapsular hematoma <10% surface area in grade I to hepatic avulsion in grade VI. According to this scale, our patient had a grade I injury. In liver injuries associated with bile leak as in our patient, diagnosis and evaluation of the leak site may be made by ERCP and HIDA scan of the biliary tree. (11,7)

Considerable flexibility is needed in the management of liver trauma. The likelihood of success with non-operative management is higher for low-grade injuries (Grade I, II, III) compared
with high-grade injuries (Grade IV, V). Patients with Grade VI injuries are universally hemodynamically unstable, mandating surgical intervention (2).

Among patients with bile leak, some may be expectantly managed while others may require a more aggressive form of intervention for the eventual resolution. Drainage of the bile collection followed by close observation often serves as definitive therapy. (12) However, some patients have persistent bilious drainage like in our patient. This can often be successfully managed by ERCP with sphincterotomy and/or biliary stent placement. (11,7)

CONCLUSION
Hepatic laceration, though life-threatening, is not a well-described complication of a cough. Also, the formation of a biloma in the lesser sac is a rare phenomenon. This report provides a detailed account of such a complication along with an unlikely site of bile collection occurring secondary to vigorous coughing.

References:


Figures-

Figure 1.
Author- Minni Meka

Computed Tomography showing large fluid collection in the lesser sac.
Figure 2.
Author- Minni Meka

Top

ERCP showing leak of contrast from left lobe of liver
HIDA showing tracer activity in the left upper quadrant drain indicating communication with biliary system.