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CASE REPORT

Posttraumatic Bilothorax In A Child: A Case Report

Ghritlaharey RK

ABSTRACT

Blunt injury liver associated with diaphragmatic tear and bilious pleural effusion is a rare clinical finding in children. A 12 years old boy was referred to us for respiratory distress following blunt injury abdomen. Investigations revealed liver contusion, tear in right dome of the diaphragm, bilious collection in subphrenic space and right pleural cavity. He responded well to the right intercostal chest tube drainage and antibiotics.

Key words: Bilothorax, Blunt injury liver, Cholethorax, Diaphragmatic injury, Pleural effusion.

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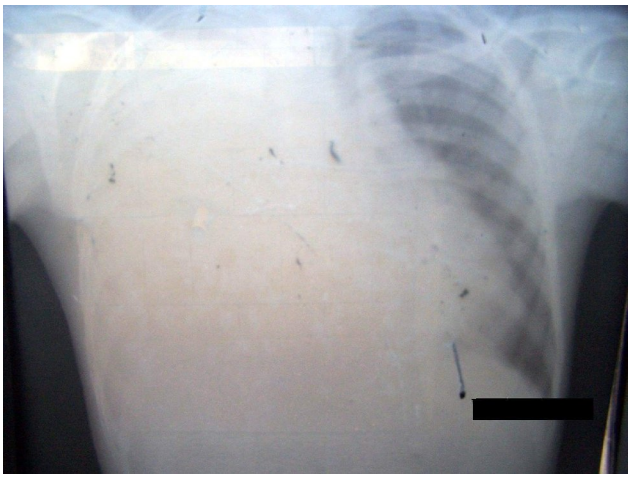
Introduction

Biliary pleural fistulas and the formation of bilious pleural effusion (bilothorax / cholethorax) an unusual complication and known to hepatic trauma, parasitic liver disease, subphrenic abscess, biliary obstruction. Iatrogenic causes include biliary stent migration, radio frequency ablation, following cholecystectomy, liver biopsy, and percutaneous transhepatic biliary drainage. [1] There is paucity of reports in literature of bilothorax in children. [2] Bilothorax as a complication following cholecystectomy in dog has also been reported in literature. [3] We are reporting a 12 years old boy with posttraumatic bilothorax successfully managed with thoracentasis and antibiotics.

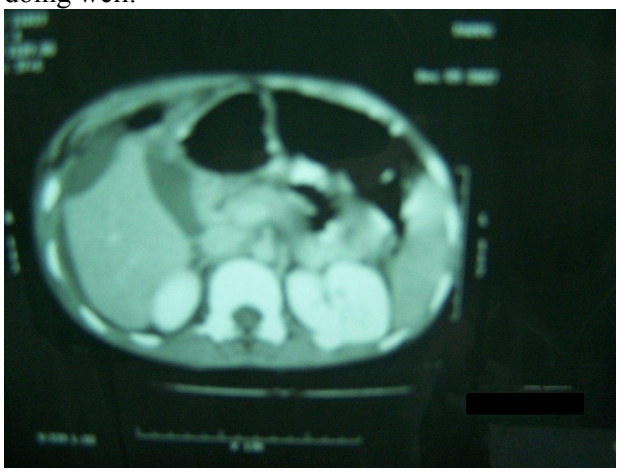
Case Report:

Among our many senses, smell is considered to be one of the more subjective, and it is open to emotional and cognitive influence. Smell can influence and be influenced by mood, lending a great deal of sensitivity. Because perception can skew or A Twelve years old boy was presented with a history of bullhorn injury over his right side of the abdomen 20 days ago. He was treated for the same at district hospital and refereed to us for respiratory distress for last 5 days. There was no history of fever, vomiting, jaundice, blood in stool, etc. His pulse was 110/min, respiratory rate was 46/min, afebrile, and he was anaemic and in mild respiratory distress. Abdominal examination revealed a healed scar of 5x3 cm at right hypochondrium with mild upper abdominal distension without visible bowel loops. There was mild tenderness at right hypochondrium without guarding, rigidity, fluid thrill or shifting dullness and bowel sound was normal. Respiratory system examination revealed decreased air entry and breath sounds on right side. Other systemic examinations were within normal limits. Chest roentgenogram showed haziness on right side with shift of mediastinum to the left side (Table / Fig 1). Investigations revealed; Hb - 10.8gm% after two blood transfusions, T& D – 11,800/cm. His serum electrolytes, blood urea, serum creatinine, blood sugar, liver function tests etc were within normal limits.



Table/Fig 1: Chest roentgenogram Showing – Right pleural effusion with shift of mediastinum to the left side

Ultrasonography of the abdomen and chest revealed contusion in superior part of right lobe of liver, fluid collection within the right pleural cavity, sub diaphragmatic, sub hepatic space with small fluid collection and septations in pelvis. CT scan of the abdomen and chest confirmed the above findings and also detected collapse of the right lung and a small tear in right dome of the diaphragm (Table / Fig 2). Diagnostic thoracentasis revealed bile in right pleural space and therapeutic right intercostal chest tube drainage was done (Table / Fig 3). About 1.5 litre of biliary fluid was drained immediately. Bilious pleural drain culture was positive for coagulase negative staphylococcus. He responded well to the intercostal chest tube drainage and broad-spectrum antibiotics (ceftriaxone + metronidazole and amikacin) and supportive treatment. The chest drain was removed on 7th postoperative day; as follow-up x – ray chest was quit normal and there were no effusion (Table / Fig 4) and thoracostomy tube was not draining any thing for last two days. He was discharged on 10th post admission day. He is on regular follow up and doing well.



Table/Fig 2: CT Scan of abdomen and chest" Showing Liver contusion, tear right dome of diaphragm, collection in subphrenic, sub hepatic space etc

Discussion:

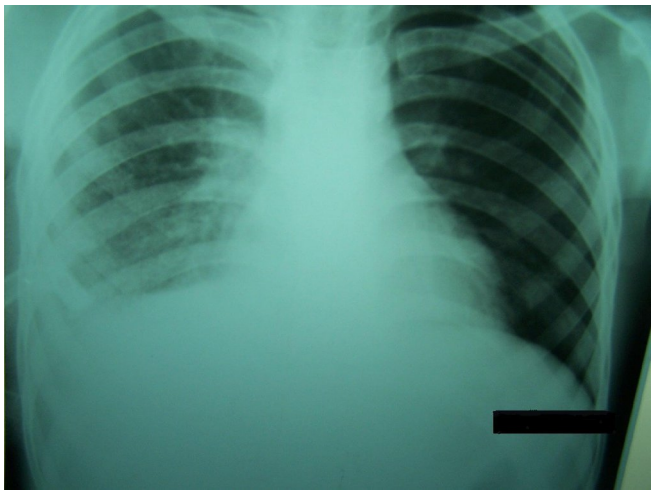
Bilothorax is usually as a result of a biliopleural fistula due to a thoraco abdominal trauma or related with a surgical intervention, diaphragmatic defect and diseases of the bile duct. Also it could be occurred by the transmission of abdominal effusion from the diaphragmatic pores or tear in the diaphragm or via the lymphatics to the thorax. [1 – 4, 5] Traumatic rupture of the diaphragm resulting from blunt abdominal trauma remains a challenging clinical entity. Description of such type of injuries in children is scarce in the literature. [6] Review of the clinical literature reveals that, the majority (80-90%) of blunt diaphragmatic ruptures have occurred on the left side. The less common right-sided ruptures have more severe associated injuries and result in greater hemodynamic instability. [7]

Clinical presentation varies depending on the mechanism of injury (ie, blunt vs penetrating) and the presence of associated injuries. Symptoms of diaphragmatic injuries frequently are masked by associated injuries. The diaphragm is integral to normal ventilation, and injuries can result in significant ventilatory compromise. A history of respiratory difficulty and related pulmonary symptoms may indicate diaphragmatic disruption. Diagnosis of diaphragmatic rupture is often missed after blunt thoracic and abdominal injuries because diaphragmatic injury does not play an important role beside severe injuries of intrabdominal and/or thoracic organs. [7] In our case the cause of biliary pleural effusion was liver contusion associated with adjacent tear in the right dome of the diaphragm. We presume that the presence of liver adjacent to the diaphragmatic tear prevent herniation of the intestine, etc to the thoracic cavity. At the same time as the diaphragmatic tear was about 3 cm, so only allowed the bile to the pleural cavity.

Ultrasonography, CT scan of abdomen and chest and radionuclide scan can identify bile collections but may fail to determine the biliopleural fistula site. Literature substantiates endoscopic retrograde cholangiopancreatography as the imaging modality of the choice for the bilothorax. Definitive diagnoses require thoracentasis to demonstrate the bile in the pleural fluid and a total pleural bilirubin level higher than in serum. [2, 8]

Bilothorax can be managed by conservatively or surgically. Conservative management consists of thoracostomy tube drainage of bilious pleural collection, antibiotics and supportive. The somatostatin analog, octreotide may be used because it indirectly contracts gall bladder smooth muscle and relaxes the sphincter of Oddi. Surgical treatment is required if biliopleural fistula is large or tube drainage is unsuccessful. The pressure gradient driving the bile into the thorax should be relieved either by sphincterotomy and / or temporary placement of transampullary stent. Some patient may require laparotomy and or thoracotomy if there are associated major visceral injuries [2, 4 - 8].

Table/Fig 3:Clinical photograph of patient Showing Thoracostomy tube in place, bilious collection in chest drainage bag, healed abdominal scar.



Table/Fig 4: X – Ray Chest and Abdomen - just before removal of thoracostomy tube" Showing No pleural collection, expended lung etc.

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