BILIOMA DUE TO BLUNT ABDOMINAL TRAUMA: A
CASE REPORT AND REVIEW OF LITERATURE

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ABSTRACT
Background: Bilioma is a rare abnormal localized collection of bile outside biliary tree due to an injury or biliary leak postoperatively. Case: A 15 years old male presented to us with a complaint of greenish discharge from abdominal scar with generalized abdominal pain. There was supra-umbilical localized bulging and generalized guarding and rigidity since three days. The patient was giving a history of blunt abdominal trauma three months back for which he had undergone laparotomy, but he is not aware of which procedure done. At laparotomy we found a loculated collection of bile measuring 20 x 15 cm. which was drained and its wall sent for histopathological examination. The histopathological report is suggestive of the fibrous wall. Conclusion: Intra-abdominal collection points towards traumatic injury to the biliary system. The biliary injury is to be thoroughly investigated which had led to the formation of the bilioma. The management depends on whether there is an ongoing bile leak or just an old collection (infected/sterile).

KEYWORDS: Bilioma, Blunt abdominal trauma

Introduction
Bilioma defined as a bile collection, either encapsulated or not, outside the biliary tree, with intra- or extrahepatic location, generally of iatrogenic nature or resulting from abdominal trauma [1, 2]. The word “Bilioma” was first utilized by Gould & Patel in 1979 [2,7]. Spontaneous rupture of the biliary tree rarely observed, sometimes being associated with choledocholithiasis [1, 4]. The detergent activity of bile acids provokes chronic inflammation that causes adhesions, leading to a possible loculated appearance of the collection. The mean time between symptoms onset and the diagnosis is one to two weeks [2]. Most bilioma collect in the subhepatic space [5]. Here we report a 15 years old male patient presented with greenish discharge from abdominal scar with generalized guarding and rigidity.

Case report
A 15 years old male patient came with greenish discharge from the abdominal scar, generalized abdominal pain and abdominal distension with supra-umbilical bulging for three days. The patient was giving a history of blunt abdominal trauma due to fall from stairs followed by laparotomy three months back at a private hospital. He was unaware of which procedure done. On palpation, there was generalized abdominal guarding and rigidity. There was abdominal distension with supra-umbilical bilious discharge from the previous scar. He underwent emergency hematological and radiological investigations. The liver function tests with coagulation profile were normal. Renal function test was also normal. On hematological examination, there was raised WBC count and raised ESR was found the rest of the investigations came out to be normal. Ultrasound findings were suggestive of 20x15x20 cm size intra-peritoneal collection with internal echoes & debris and two more intra-peritoneal collections of 7x5 cm and 6x5 cm were noted. All three were connected with each other.
The decision to do emergency laparotomy was made given features of peritonitis and ongoing sepsis. [Figure 1]

Intraoperatively we found a large loculated collection containing bile with a thick wall. The cyst was occupying almost entire abdominal cavity that was dissected from surrounding structures carefully and removed completely. Bowel, biliary tree, liver and other organs were examined but were totally normal. Two drains were kept. One in Morrison’s space and another in left pelvic space. Up to third postoperative day, the drain output was sero-hemorrhagic with bile tinge ranging from 100-150 ml. From fourth post-operative day, the drain output was serous in between 50 to 100 ml up to a 7th day. On the 8th day, the Morrison’s drain was removed and on 10th left pelvic drain was removed. After that the postoperative course was uneventful. [Figure 2]

The cyst wall sent for histopathological examination. It was suggestive of many clumps of bile pigments with lymphohistiocytic cells, giant reactive cells and vascular proliferation in the fibrous wall without mucosal epithelium. Favoring diagnosis of bile containing pseudocyst (Bilioma). [Figure 3]

**Discussion**

Description of bilioma is exceedingly rare in medical literature. Most bilioma develops following surgery and abdominal trauma [1, 5, and 6]. As the preference for laparoscopic biliary surgery is increasing, the occurrence of bilioma due to iatrogenic perforation increased from 0.1% to 1.5%[2]. Gould and Patel reported the first case of bilioma in 1979 in which extrahepatic bile leak was found following abdominal trauma. It accumulated in an encapsulated form without peritonitis [2, 7]. Bilioma can be due to iatrogenic injury to biliary tree, liver trauma or spontaneous. The most common surgical cause is following cholecystectomy [8]. Iatrogenic Nonsurgical causes are percutaneous Trans-hepatic cholangiography (PTC), liver biopsy and percutaneous Trans-hepatic biliary drainage (PTBD) [4]. One of the occurrences of bilioma found in a patient with rheumatoid arthritis, who was on a Tablet Prednisolone 5mg once a day for ten years, reported by Gonsalves in 1979 [9]. Spontaneous bilioma is rarest among all biloma. Among those extremely rare cases, most common
cause of spontaneous bilioma is congenital biliary malformation in children and cholecodolithiasis in adults [3, 6]. Less common cause of spontaneous bilioma are hepatic infarction, hepatic abscess, the malignancy of biliary tree, obstructive jaundice, acute cholecystitis and extrapulmonary tuberculosis [1, 3, 4, and 10]. One of the pathology for spontaneous bilioma is an increase in intraductal pressure due to obstructive lesion or infarction of biliary tree [10]. Nowadays, bilioma and biliary fistula arising from extrahepatic duct are traumatic in origin, usually following biliary, pancreatic and gastric surgery [11, 12]. In our case, previous history of blunt abdominal trauma with liver injury was there, suggestive of traumatic origin.

Clinical symptoms of bilioma are highly nonspecific. They can range from abdominal pain, abdominal distension, persistent biliary discharge, jaundice. Leukocytosis and elevated liver enzymes can also be sometimes found [13, 14]. In our case, abdominal distension, bilious discharge with abdominal pain with leukocytosis was present. Site of bilioma is usually right upper quadrant of abdomen [10] but in our case it was occupying almost entire abdomen. Bilioma can be of different size ranging from few centimeters to 40cm and maximum collection of almost entire abdomen. Bilioma can be of different size ranging from few centimeters to 40cm and maximum collection of 5700ml [15]. In our case size of bilioma was 20x15cm containing 2800ml of bile.

Abdominal ultrasound is the first line investigation for evaluation of bilioma. CT scan with contrast accurately defines disease, its cause and relations with adjacent structures [4]. Differential diagnosis should include hematoma, seroma, liver abscess, cyst, pseudocyst, and lymphocele [3]. MRI is the modality of choice for detecting stones and hepatobiliary tree communication [16]. ERCP is also of diagnostic as well as therapeutic purpose [10]. Percutaneous aspiration or FNAC under radiological guidance also helps in diagnosis and treatment. Biochemical analysis of fluid also helps in differentiating bile from other liquids [9].

Treatment of bilioma has changed drastically as the medical field is progressing. In past surgery was the only mainstay treatment for bilioma [17]. Percutaneous and endoscopic management with or without stent placement provide adequate drainage and may be therapeutic in most cases [17]. ERCP is indicated in case of persistent biliary leak despite percutaneous drainage [10]. Nowadays surgery is to be done when all other treatment fails.

Conclusion
A patient with blunt trauma abdomen with a history of bilious drainage and intra-abdominal collection points towards traumatic injury to the biliary system. So efforts should be made to know the nature of harm and details of surgical procedures performed. Biliary injury if any needs to be thoroughly investigated which had led to the formation of the bilioma. The management depends on whether there is an ongoing bile leak or just an old collection (infected/sterile).

Authors’ Statements
Competing Interests
The authors declare no conflict of interest.

References