

A rare case report of delayed presentation of bilioma after failed attempt of cholecystectomy

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Abstract

Bilioma is defined as collection of bile within the abdominal cavity. It can be either intrahepatic or extra hepatic. It is a rare condition with an incidence of 0.3-2%.[1]. There can be many causes for bilioma, some of these include traumatic injury to biliary system, spontaneous rupture of biliary tract, choledocholithiasis and abdominal injury. Laparoscopic cholecystectomy has an incidence of 0.3-2% of having a bile leak to occur [2]. In majority of diagnosed case, they are secondary to iatrogenic disruption of the biliary system. Hence the incidence of bilioma will depend on the frequency of inter vention. To date, there has not been difference between men and women when it comes to bilioma formation.

A 45-year-old gentleman came with complaint of Pain in abdomen in generalised with abdominal distension associated with intermittent fever with chills and rigor. He had history of complaint of pain in abdomen in Right hypo chondrium 8 months back and diagnosed as chole lithiasis underwent laparoscopic chole cystectomy converted to open cholecystectomy and then procedure was abandoned in view of frozen calot’s. ERCP was done in view of Choledocholithiasis.

Post ERCP above symptoms developed. Patient underwent repeated ERCP with stent exchange. CT

guided Pigtail Catheter Insertion in collection was done with daily output monitored and intravenous antibiotics was given. The collection came positive for bile salt and bile pig ment suggestive of bilioma. Patient’s vitals improved gradually and was managed conservatively. On follow up visit, there was complete resolution of symptoms with nil output from pigtail.

Keywords: bile leak, choledocholithiasis, laparoscopic cholecystectomy, ERCP, Pigtail

Introduction

Bilioma is defined as collection of bile within the abdominal cavity. It can be either intrahepatic or extra hepatic. It is a rare condition with an incidence of 0. 3-2%. [1]. there can be many causes for bilioma, some of these include traumatic injury to biliary system, spontaneous rupture of biliary tract, choledocholithiasis and abdominal injury. Laparoscopic cholecystectomies has an incidence of 0.3-2% of having a bile leak to occur [2]. In majority of diagnosed case, they are secondary to iatrogenic disruption of the biliary system. Hence the incidence of bilioma will depend on the frequency of inter vention. To date, there has not been difference between men and women when it comes to bilioma formation.

Case report

45 year old male came with history of failed attempt laparoscopic converted open cholecystectomy in JAN 2022 due to dense peri-Gallbladder (GB) Adhesion and Frozen calot's Triangle. Patient was under regular follow up in same hospital when he developed pain in Right Hypochondrium with abdominal distension, on further investigation. Lab parameters were as follows Haemoglobin (Hb) –12.5 leucocyte count-24000 – Total bilirubin/ Direct Bilirubin (T. bili/ D. bili) - 3.6/2.0 Alkaline phosphatase- 250. To further evaluate the cause of this obstructive features of jaundice, CECT abdomen and pelvis (A+P) was done which was suggestive of (s/o) moderate ascites in abdomen and pelvis with possible loculation and nodularity. Calculus on partially distended GB, Choledocholithiasis (CDL) with dilated intra and extra hepatic biliary system and 9mm distal common bile duct (CBD) calculi. Since patient had CDL, endoscopic retrograde cholangiopancreatography (ERCP) was done s/o – dilated CBD 20mm with single filling defect in mid-CBD. Sphincterotomy done, biliary stent placed. Clearance was not achieved despite multiple attempts. Patient was further referred to tertiary Hospital for further management.

On admission to our hospital, patient presented pain in abdomen which was generalised in nature associated with vomiting post meal, bilious in nature, icteric and passing of high coloured urine. On examination, patient was febrile on touch, per abdomen – soft, distended and tenderness present which was generalised, anaemic and icteric. Lab parameters were as follows – Hb-13.1 leucocyte count- 24,200 platelet >4. o lakh, ALP- 200, T. Bil- 2.9 D.bil-0.9, SGOT/SGPT-18.9. INR – 1.32. patient was stabilised. Kept Nil By mouth (NBM) and Started on Intravenous (IV) antibiotics and IV maintenance fluids. Further evaluation was done, initially with ultra sono

graphy (USG) (A+P) (s/o) – septate moderate ascites seen which was well defined anechoic cystic collection seen in the epigastrium approximately(approx.) 1400-1500cc. Dilated CBD with Stent seen in-situ with pneumobilia.

Further evaluated with CECT(A+P) s/o – Cholelithiasis and Multiple intra peritoneal and retro peritoneal collections.

Followed by MRI (A+P) s/o – Stent was seen in common bile duct (CBD)(16mm) with stricture in CHD. Central intrahepatic biliary radical dilated (IHBRD) present with CDL (16mm) and Multiple intraperitoneal collection. Collection with hypointense debris seen in the perihepatic region and Another well-defined collection seen in the lesser sac extending into the transverse mesocolon. Pancreas appears normal. Main pancreatic duct not dilated.

Plan for percutaneous drainage of collection was done and CT guided 2 pigtail insertion was done in collection which were placed in the following location – Pigtail 1 – in the collection just beneath the anterior abdominal wall and above the liver and Pigtail 2- retro gastric collection in lesser sac communicating with left paracolic gutter. Collection were sent for bile salt and bile pigment which came positive. SAAG: <1.10. Fluid Amylase - 118.1. Day 1, Both pigtail drained 500ml of fluid which was dark yellow in colour. Planned for 2nd ERCP – Previously Placed Stent was removed. Cholangiogram s/o IHBRD with abrupt cut-off at CHD multiple filling defect in mid and distal CBD. CHD stricture dilated with graded SBDC (Sohendra Biliary Dilation Catheter). 11.5f SBDC couldn't be negotiated. 7F x 12 cm plastic biliary stent deployed across the stricture.

Patient was treated conservatively for 7 days, clinically improved with abdominal pain settled – and fever

episodes stopped with laboratory parameters improved and as follows Hb-12.2 leucocyte counts 12,800 platelet > 4. o lakh, ALP- 144, T. Bil- 2.0 D.bil-0.9, SGOT/SGPT-18.9/14. Daily pigtail output was monitored with gradual decrease in 24 hr output from 200cc from pigtail 1 and 250cc from pigtail 2 to 30cc from both. Residual scan done s/o retroperitoneal collection non-communicating and not draining from either pigtail.

Iv antibiotics stepped down with continues daily pigtail output monitoring. Patient completely recovered with lab parameters as follows at the time of discharge Hb-12.2 leucocyte counts 8500 platelet > 4. o lakh, ALP- 125, T. Bil- /D. Bil-Non icteric, SGOT/ SGPT - 15IU/ 17IU. Patient was discharged home with pigtail in-situ and oral antibiotics. On follow up after 4-week, patient had fully recovered with abdominal pain and distension fully settled with nil output from both the pigtail.

Discussion

The first case of bilioma was reported by Gould and Patel [3] which occurred following abdominal trauma, resulting in extrahepatic bile leakage followed by encapsulated bilioma with no signs of peritonitis.

The patho physiology of bilioma is still not well understood however one of the risk factors could be in biliary obstruction or infarction resulting in bilioma formation [4,5]. Symptoms can range from no symptoms at all to severe symptoms of peritonitis which include diffused or localised abdominal pain with or without fever, abdominal fullness. Blood test showing leucocytosis and nonspecific liver function test. This makes diagnosing a challenging task at times.

According to study by Vazquez et al [7] bile collection is usually encapsulated when it occurs quickly in a short period and it can cause peritonitis, but if the leakage and collection occur slowly, there is only mild inflammation of biliary tract and peritoneum. Similarly In our case

most probable cause of bile duct (CHD) injury during laparoscopic converted open cholecystectomy leading to bile leak and bilioma formation.

The patient described in this case report presented with abdominal pain, abdominal fullness and non-bilious vomiting associated with fever and high coloured urine. He had associated risk factors of abdominal surgery and as well as biliary intervention hence high suspicion for bilioma was present.

The diagnosis included clinical presentation and radiological imaging. Initial investigation being USG of abdomen as it is non-invasive and rapid. further evaluation to rule other cause was CECT scan and MRCP which help in complete imaging of biliary system. ERCP is not used as initial modality due to high risk of complication including pancreatitis but in our case since CDL was present with stent block, ERCP was done as it is both diagnostic tool and therapeutic modality. Imaging-assisted percutaneous aspiration of the biliary collection serves dual purposes in the management of bilioma, encompassing both diagnostic and therapeutic modalities. The fluid in question plays a critical role in facilitating bioanalytical investigations, whilst simultaneously contributing to the discernment of a bilioma from other potential pathologies such as bilhemia, abscess, cystic lesions, lymphocele, seroma, or hematoma. The complete resolution of smaller biliomas can potentially be achieved through the implementation of imaging-guided percutaneous drainage procedures. The occurrence of spontaneous resolution of biliomas with a diameter of 4 cm or greater is infrequent, as has been noted by previous research [8]. Patients who remain symptomatic and those who exhibit a bilioma of substantial size, defined as having a diameter measuring greater than or equal to 4 centimetres, are susceptible to experiencing severe complications. These may manifest

in the form of biliary peritonitis, sepsis, pancreatitis, abdominal abscesses, gastrointestinal bleeding, pulmonary embolism, and respiratory failure. A combined approach encompassing percutaneous drainage and endoscopic retrograde Cholangio pancreas tography (ERCP)-guided biliary stenting was employed, resulting in the complete alleviation of symptoms exhibited by the patient. Hemodynamically unstable patients with septic shock, biliary peritonitis, bilio pleural fistula, or bilhemia are at an increased risk of mortality which may escalate rapidly, thus necessitating emergent surgical exploration.

Conclusion

We present you a rare case of bilioma following failed attempt of cholecystectomy both laparoscopic and open. Which further aggravated due to ERCP leading to back pressure of biliary system hence we would like to conclude that the inclusion of bilioma in the differential diagnosis of right upper quadrant abdominal pain is advisable due to the limited presentation of diagnosis-specific symptoms in certain patients. The adoption of a comprehensive methodology involving image guided bilioma drainage and ERCP-guided biliary stent placement at the biliary leak site is likely to yield a more favorable outcome in addressing both spontaneous biliary leak and recurrent bilioma formation than the utilization of single approaches in isolation.

Prior to implementation, it is imperative to conduct an appropriate imaging modality to accurately localize the origin of seepage at an early stage, thereby opening up the possibility for minimally invasive interventions to achieve resolution and optimize clinical outcomes.

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