

# Giant mucocele of gallbladder mimicking choledochal cyst

## Abstract

We report a case of giant mucocele of the gallbladder in a 5-year-old patient which was initially misdiagnosed as a choledochal cyst on investigations. Diagnosis was confirmed on surgical exploration and histopathology.

**Key words:** Choledochal cyst, giant mucocele of gallbladder, Rokitansky–Aschoff sinuses

## INTRODUCTION

Mucocele of the gallbladder (GB) is a very rare entity in pediatric age group. Mucocele (hydrops) of the GB is a term denoting an overdistended GB filled with mucoid or clear and watery content. The condition can result from gallstone disease, the most common affliction of the biliary system. The rarity of this disease in children led to its misdiagnosis as a choledochal cyst which is a bile duct anomaly.

## CASE REPORT

A 5-year-old female child came to the pediatric outpatient department in our hospital with complaints of pain abdomen and headache for 10 days associated with vomiting on and off. There was no history of fever or altered bowel movements. Physical examination revealed mild jaundice and on per abdominal examination, a lump was palpable in right hypochondrium. On ultrasonography (USG), GB was found to be grossly dilated with dilatation of common bile duct (CBD), right and left hepatic ducts, and CBD showing an abrupt tapering end [Figure 1].

Contrast-enhanced computed tomography (CT) of the abdomen was done which was suggestive of choledochal cyst [Figures 2 and 3]. Liver and renal function tests were within normal limits. After preoperative preparation, the patient was taken up for surgery. On laparotomy, there was gross dilatation of GB, about 10 cm × 10 cm, containing dirty bile which was sent for culture and sensitivity examination. Cholecystectomy was performed. Rest extrahepatic biliary ducts were normal. Histopathologically, it was found to be mucocele of GB. Postoperative period was uneventful and the patient was discharged on the 7<sup>th</sup> day. The patient was well in follow-up. In follow-up USG, intra- and extra-hepatic biliary ducts were within normal limits.

## DISCUSSION

The GB mucocele distension, which is usually noninflammatory, results from an outlet obstruction of GB and is commonly caused by an impacted stone in the neck of the GB or in the cystic duct.<sup>[1]</sup> The bile or bile pigment is slowly resorbed, and continuing secretion from the mucosa of the

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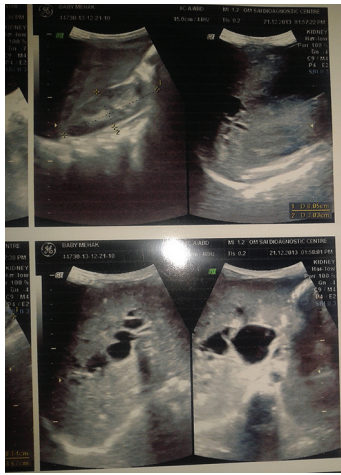
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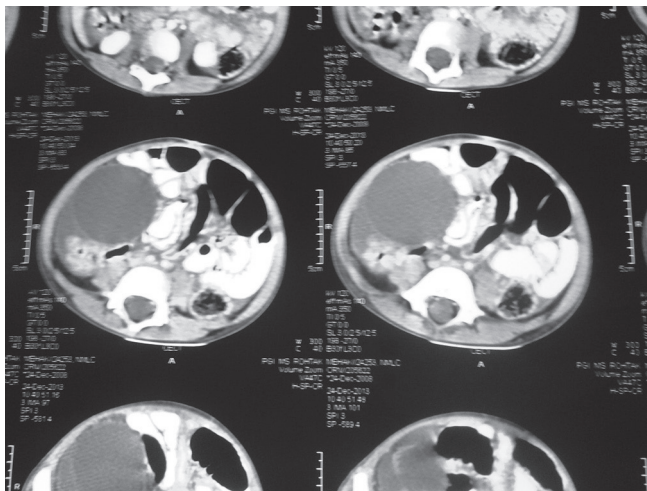
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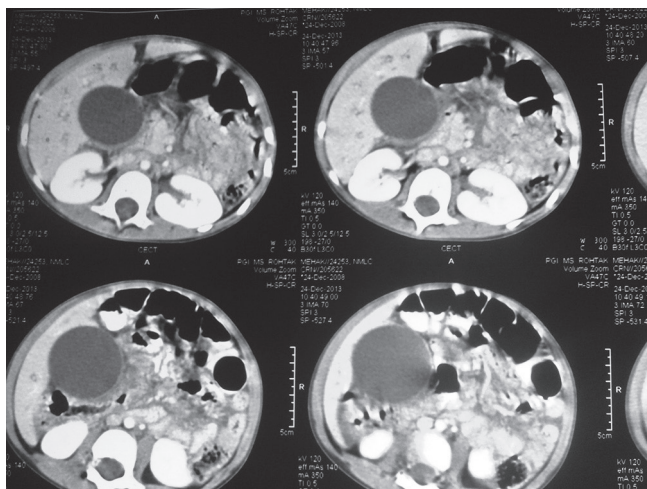
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**Figure 1:** Ultrasonography showing grossly dilated gallbladder and common bile duct



**Figure 2:** CT images showing giant mucocele of Gall bladder



**Figure 3:** CT images showing giant mucocele of Gall bladder

GB results in clear and watery or mucoid content (white bile). Choledochal cyst is characterized by a balloon-like (cystic) or tubular (fusiform) dilation of extrahepatic bile duct, occasionally associated with dilation of intrahepatic bile ducts.<sup>[2]</sup> The pathogenesis is probably multifactorial.<sup>[3]</sup> They are more prevalent in females than in males, with a female-to-male ratio in the range of 3:1–4:1. Two-thirds of cysts are diagnosed before the patient aged 10 years,<sup>[3,4]</sup> whereas mucocele of GB usually occurs in older age groups and is extremely rare in children. Long-standing obstruction to the GB's outflow results in overdistension of the GB; occasionally, the GB assumes massive proportions in case of a mucocele whereas giant GB has never been reported in literature with a choledochal cyst. In mucocele, microscopic examination reveals a flattened mucosa lined by low columnar or cuboidal cells; the increased intraluminal pressure results in plentiful Rokitsky–Aschoff sinuses. Inflammatory cells may be present either in small numbers or in abundance.<sup>[1]</sup>

Symptoms of a GB mucocele include right upper quadrant pain or epigastric pain and discomfort associated with nausea and vomiting. Physical findings include minimal acute inflammatory signs with a large, palpable, somewhat tender mass per abdomen.<sup>[1,5]</sup> In case of a choledochal cyst, also right upper quadrant mass may be palpable. This is observed more frequently in infancy and early childhood. Patients who develop pancreatitis present with nonspecific midepigastric or diffuse abdominal pain. The classic triad of intermittent abdominal pain, jaundice, and right epigastric mass is not very common and is mostly present in older children and adults.

No single laboratory test is diagnostic of a GB mucocele and choledochal cyst. In case of mucocele, bilirubin is usually within the reference range but may be mildly raised with Mirizzi syndrome or associated CBD obstruction or cholangitis. Liver enzymes are usually within the reference range though alkaline phosphatase may be mildly elevated; large increases suggest an obstructed CBD. In patients with choledochal cyst, hepatocellular enzyme and alkaline phosphatase levels may be elevated. USG is extremely sensitive in detecting stones in the GB. It is also useful in identifying ductal obstruction and is extremely useful in identifying intrahepatic biliary tree dilatation.<sup>[1,5]</sup> It is the test of choice for the diagnosis of a choledochal cyst too. Hepatobiliary iminodiacetic acid scanning is capable of offering only indirect evidence of mucocele GB but possibly worth considering in obscure cases. CT is indicated when the diagnosis is unclear or other associated conditions or complications are present, to delineate the anatomy of the lesion and the surrounding structures. It can also assist in defining the presence and extent of intrahepatic ductal involvement. Magnetic resonance cholangiopancreatography is useful for defining anomalous pancreaticobiliary junctions<sup>[6]</sup> and pancreaticobiliary anomalies.<sup>[7]</sup> Surgery is definitive treatment for GB obstruction<sup>[8]</sup> as well as for cysts. In case of mucocele, the prognosis is excellent if the diagnosis is correct and no complications have ensued. Complications may develop when progressive inflammation leads to acute cholecystitis and all its attendant manifestations. For choledochal cysts, complete excision with construction of a biliary-enteric anastomosis is performed to restore continuity with the gastrointestinal tract.<sup>[9]</sup> Here, the prognosis may not be very good if intrahepatic cysts are present.

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## Conflicts of interest

There are no conflicts of interest.

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