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Case Report

A Rare Case of Gall Bladder Duplication presenting with Cholelithiasis

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Introduction

Gall bladder duplication is a very rare anomaly, occurring in about 1 per 4000 births.[i] It results from an aberration during embryogenesis, leading to the formation of two separate gallbladders that might have their own separate cystic ducts. Most cases are asymptomatic and discovered incidentally, but some may present with symptoms similar to those of a single gallbladder pathology.

Congenital anomalies and anatomical variations of position of gall bladder can be a cause of increased complications after laparoscopic cholecystectomy.

We would like to present a case of gall bladder duplication, which presented clinically as a case of abdominal colic due to cholelithiasis. But gall bladder duplication was missed on ultrasonography.

Case Report

A 49 years old female presented with pain in right upper abdomen, mild to moderate in nature for the last month. There was history of radiation of pain to back and right hypochondrial region. Pain was intermittent, lasting for 3-4 mins and getting relieved with anti-spasmodic medication. There is no history of vomiting, fever, jaundice or any urinary or bowel irregularities.

On clinical examination, abdomen was soft and non-tender, no lump was palpable. Peristaltic sounds and percussion were normal.

Ultrasonography showed multiple calculi in the gallbladder. No edema of the gall bladder wall was seen.

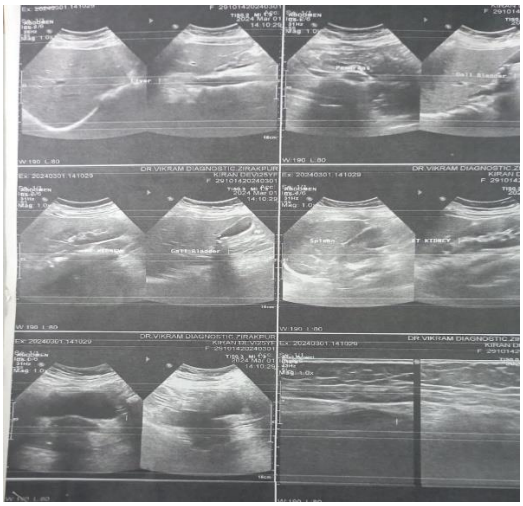

Figure 2: Ultrasound Gall Bladder

Patient underwent laparoscopic cholecystectomy.
Per-operative findings showed normally distended gall bladder and the fundal region showed septation. Multiple calculi removed and complete septation was detected while removing the stones. One cystic duct was identified. On cut section, duplicated gall bladder was seen.
Histopathology report showed a specimen of gall bladder weighing about 38.5 gm consisting of double gall bladder measuring 8*5 cms. The specimen had two openings at the neck. Cut surface of the specimen showed septa extending from neck to fundus dividing the entire gall bladder into two parts. Mucosa is velvety. Wall thickness 0.2-0.3 cms. One cystic lymph node isolated measuring 0.8 cms.
Microscopy showed section from both gall bladders showing wall with edema, congestion, fibrosis and focal muscular hypertrophy. Lamina propria and muscle showed moderate infiltration by lymphomononuclear cells. Mucosa is preserved in both gall bladders. Sub serosal fibrosis is noted. Lymph node isolated showed evidence of reactive hyperplasia. No evidence of dysplasia or malignancy seen.
Final diagnosis was rendered as Chronic calculous cholecystitis with evidence of duplication of gall bladder with reactive hyperplasia of the lymph node.

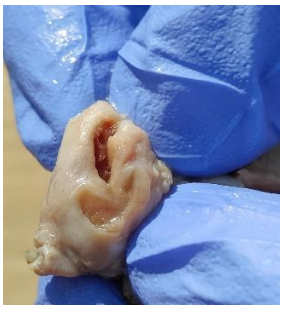

Figure 3: External surface of Gallbladder

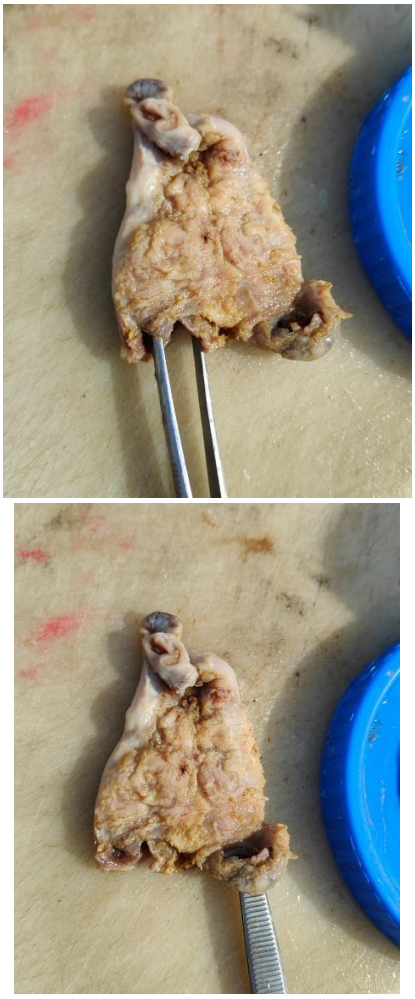

Figure 4: This diagram depicts two different openings of the gall bladder as shown by the insertion of forceps.

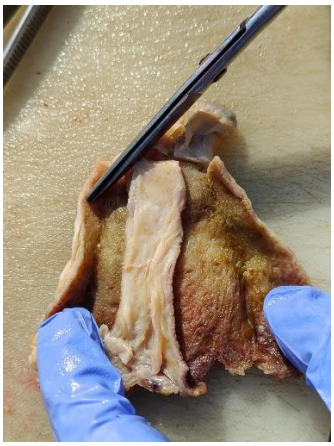

Figure 5: Cut section of the Gall bladder showing central septum separating the two lumens of gall bladder.

Gallbladder duplication is a rare congenital malformation, occurring in about one per 3000 - 4000 births.[1] Presence of a double gallbladder was first reported in 31BC by Pliny.[2]
These congenital anomalies pose a definite risk of biliary injury during operative interventions like laparoscopic cholecystectomy.[3,4]

It is thought to be due to exuberant budding of the developing biliary tree when the caudal bud of the hepatic diverticulum divides[5,6]. This results in the formation of two epithelium lined sacs which are either partially joined or completely separate from each other.
Differential diagnosis of duplication of gallbladder includes gallbladder fold, Phrygian cap, choledochal cyst, pericholecystic fluid, focal adenomyomatosis and intraperitoneal fibrous bands.[7]

Anatomic variants of gallbladder duplication are still differentiated according to Boyden's classification as follows[8-9]:
Clinically right upper quadrant pain, nausea and vomiting raised suspicion of gallbladder pathology. However, clinical features of this condition are non specific and can mimick any other gall bladder pathology.
The Boyden classification divides gall bladder duplication into 3 groups[ii]:

- Bilobed incomplete gall bladder division with one common cystic duct.
- Complete gall bladder duplication with separate cystic ducts that lead to common hepatic ducts (Y-shaped type).
- Complete gall bladder duplication with a common cystic duct entering the common hepatic duct (H-shaped type).

Pre-operative imaging can be helpful but may be missed at times.

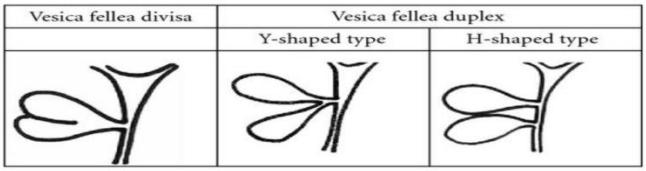

Diagram depicts Boyden's classification of Gallbladder duplication (image taken from article [iii])

Some criteria have been defined to diagnose gallbladder duplication on US examination in limited case reports[10-13]. Although US findings may suggest a double gallbladder, the cystic duct is usually not identified and it is often impossible, to distinguish bilobed gallbladder from a true duplication by US. Duplication should be considered when two cystic ducts are present on preoperative imaging. MR Cholangiography proved to be a valid, noninvasive imaging technique for the evaluation of patients with suspected anomalies of the gallbladder after initial scanning with US[14]. Helical CT scan can also be helpful[13].

Simultaneaous removal of both gallbladders at surgery is recommended to avoid cholecystis and symptomatic gallstones in the remaining organ[15,16].
Because there does not seem to be a significantly increased risk for subsequent disease, prophylactic cholecystectomy in an asymptomatic patient with gallbladder duplication is not recommended[2].

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