



GALL BLADDER AGENESIS: AN INCIDENTAL FINDING

Hepatobiliary Surgery

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ABSTRACT

Gallbladder agenesis (GA) is a rare congenital anomaly of the biliary system often associated with other congenital abnormalities. Patients become symptomatic in 23% of cases. It is often misinterpreted as other diseases or discovered incidentally. MRCP is the investigation of choice and surgery has limited role in management. We report a case of congenital GA which was discovered in a patient of penetrating injury to abdomen.

KEYWORDS

Gallbladder agenesis, incidental, MRCP

INTRODUCTION

In animals, the absence of a gallbladder has been a subject of research since the Aristotelian era (1). Since its first description by Lemery in 1701, a number of cases have been published (2). Isolated agenesis of the gallbladder is a rare congenital anomaly that results from failure of the cystic bud to develop *in utero*. Approximately 70% of Gall bladder agenesis cases are asymptomatic isolated anomalies (3, 4). Such patients do not need any intervention. Diagnosis of Gall bladder agenesis in such a population is often incidental during a surgical procedure.



Figure 1: Absence of Gall Bladder in Gall Bladder Fossa



Figure 2: Intrahepatic Hematoma in MRCP

Case Study

A 21 year old female with no prior surgical history was referred to Rajiv Gandhi Government General Hospital with a penetrating stab injury to the abdomen. A 2*2 cm penetrating wound noted in the epigastric region with omentum herniating out. CECT abdomen showed 7.2*1.8 cm laceration in right lobe of liver in segment 7 and 8, with hemoperitoneum and note of absent gall bladder was made.

On laparotomy, hemoperitoneum and deep lacerated wound 7*3 cm in segment 8 of liver was found. Gall bladder was not found in the gall bladder fossa as well as other ectopic locations even after thorough exploration. Post operative period was uneventful

MRI/MRCP Reported :

Gallbladder and cystic duct were not visualized. CBD was normal in caliber. Subcapsular hematoma of 6.6*3.3*2 cm was noted in right lobe of liver. No cystic structure noted in any of the common locations of ectopic gall bladder like intrahepatic, lesser omentum, falciform ligament, retroperitoneal and retrohepatic, hence the diagnosis of gall bladder agenesis was made.

DISCUSSION

Gallbladder agenesis (GA) is a rare congenital anomaly characterized by the absence of the gallbladder in conjunction with a normal bile duct system. (6) It can be seen in both children and adults, with a median age of 46 years at the time of diagnosis.

It is almost always an incidental finding during an abdominal surgery or at autopsy with prevalence range is 0.007–0.13%. Its incidence in surgical cholecystectomy is lower than that in autopsy reports (0.04–0.13%) (7). Gallbladder develop late in first month of intrauterine life from distal part of hepatic diverticular bud of the foregut. Agenesis of gallbladder is explained by two developmental theories (8,9): (a) Failure of hepatic diverticula to develop into gallbladder and (b) Failure of recanalization of cystic duct and gallbladder. whereas inappropriate migration of the gallbladder primordium will result in an ectopic gallbladder.

Potential sites of ectopic gallbladder are intra-hepatic, beneath the posterior inferior surface of liver, between the leaves of the lesser omentum, within the falciform ligament, retroperitoneal, retrohepatic, or in the retropancreatic and retroduodenal areas (5).

Gall Bladder Agenesis is often associated with other congenital abnormalities (12.8–30%) like duodenal atresia, malrotation of the gut, pancreas divisum, imperforate anus, hypoplasia of the right hepatic lobe, duplication cysts of the hepatic flexure, and syndactyly (10). In particular, some authors report genitourinary anomalies as most frequently associated with Gall bladder agenesis.

The occurrence of the pathology is most often sporadic; however, there are reports of families where several members are affected by this condition, suggesting the possible existence of hereditary forms. (4) Gall bladder agenesis has also been reported in association with aneuploidies like trisomy 18 and teratogens like thalidomide. (7)

Most of the patients of Gall Bladder agenesis are asymptomatic (40%–60%). Small percentage (15–16%) may lead to neonatal death in view of associated GIT/CVS anomalies with discovery of Gall Bladder agenesis on autopsy. Others (20%–25%) may present with symptoms like pain right hypochondrium (90%), dyspepsia, vomiting. These patient frequently undergo surgery because of misinterpreted reports leading to inadvertent injuries and significant morbidity (2). Various diagnostic modalities like EUS, intra-op ultrasound and selective arteriography can be used for agenesis But MRCP is considered best

modality to delineate intrahepatic and extrahepatic biliary tract as well as locating an ectopic gall bladder (1).

CONCLUSIONS

Congenital absence of the gallbladder (CAGB) is a rare anomaly that can present a diagnostic and intraoperative dilemma to the surgeon. Most affected individuals remain asymptomatic for life and diagnosed incidentally during a surgery or autopsy thereby confounding its exact prevalence. Some may present with right upper quadrant pain and dyspeptic symptoms that mimic gallbladder pathology.

During emergency exploration of the abdomen, if Gall bladder absent in gall bladder fossa, it is important to exclude an ectopic gallbladder (5). Even after surgical exploration, MRCP is advisable for re confirmation of diagnosis (11)

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