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**Case Report**

# Gallbladder agenesis, a diagnostic difficulty

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## ABSTRACT

Gallbladder agenesis is a very rare presentation where surgeons were put in a situation to diagnose the same during laparoscopy for cholecystectomy or during diagnostic laparoscopy. The preoperative diagnosis of gallbladder agenesis remains a challenge to both surgeons and radiologists. Here we present a case of gall bladder agenesis in a 59-year-old male with a preoperative diagnosis of a contracted gallbladder. Agenesis was confirmed after diagnostic laparoscopy and MRCP.

**Keywords:** Gallbladder, Agenesis, Cholecystectomy, Diagnostic laparoscopy

## INTRODUCTION

Gallbladder agenesis, 1st reported by Lemery and Bergman in 1701 and 1702, is not a common condition to be encountered.[1] Diagnosis often made intra-operatively while going for laparoscopic cholecystectomy or incidental findings during other abdominal surgeries. We present a case of gallbladder agenesis that was detected during laparoscopy and confirmed with post op MRCP.

## CASE REPORT

This is a 59-year-old male, who came with complaints of right sided abdomen pain for 15 days. Pain corresponded to right hypo-chondrium. At the time of presentation, he was having no icterus and no vomiting or pyrexia. Abdomen examination showed tenderness in right hypo-chondrium. Lab investigations with complete blood count and liver function tests showed no significant abnormality. He had USG abdomen done elsewhere, which showed contracted gallbladder with a calculous inside gallbladder. Confirmed same with an ultrasound abdomen in centre, which showed contracted gallbladder and echogenic shadow. He electively prepared for laparoscopic cholecystectomy with an informed written consent and taken up for surgery.

Intra-op there was minimal omental adhesions under liver surface where gallbladder usually resides. In view of contracted gall-bladder started dissecting and omentum was dissected. En route to find gallbladder, we landed on common bile duct. Safe dissection was made out. Common bile duct and hepatic artery defined. Thorough search for the gallbladder was done and we could not find it. Hemostasis secured. pneumoperitoneum deflated.

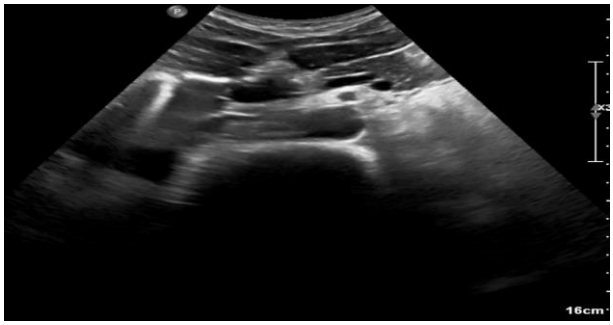


**Figure 1: Preop USG abdomen of echogenic shadow.**

Intra-operatively radiologists were called and check ultrasonography was done. Gallbladder could not be appreciated. Post operatively again ultrasound assessment was made to confirm the absence of gallbladder. MRCP eventually confirms absence of gallbladder in this patient.

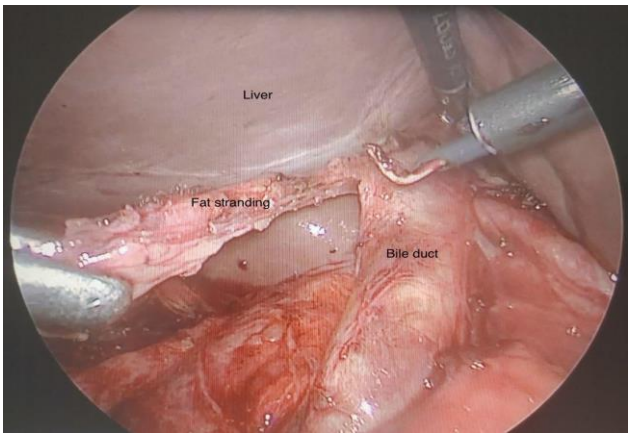


**Figure 2: Intraoperative image of bile duct and fat stranding.**


**Figure 3 (A and B): Post-operative MRCP images showing absent gallbladder.**

## DISCUSSION

Gallbladder agenesis though rare anomaly is reported to have incidence of about 0.01% and 0.075%.[2] This anomaly may occur alone or in association with other anomalies such as other biliary anomalies, hepatic, gastrointestinal anomalies, duodenal atresia, imperforate anus.[3] GA results from failure of development of the caudal part of the hepatic diverticulum during embryogenesis. Many cases are asymptomatic, but symptoms occur in about 50% of patients.[2,3]

There are families in which the condition has occurred in several members, suggesting that there are familial hereditary forms of gallbladder agenesis.[4]

Bennion divided this condition into 3 categories based on the clinical situation; healthy individuals with no clinical symptoms, symptomatic patients and those who have associated congenital anomalies.[5]

In gall bladder agenesis patients, 50% of them present with symptoms of biliary colic and it is postulated that it may be due to sphincter of Oddi dysfunction.[6]

Though ultrasound is still the diagnostic method of choice for gallbladder stones, it is observer dependent. It is difficult to differentiate gallbladder agenesis and contracted gallbladder and we faced this difficulty in this case scenario. MRCP and HIDA scan will pose a great diagnostic modality for gallbladder agenesis. Still HIDA scan holds the difficulty in differentiating cystic duct obstruction and gallbladder agenesis, MRCP remains the reliable method for detecting the absence of gallbladder.[6,7] MRCP can also detect ectopic gallbladder which delivers the anatomy and thus avoid unnecessary dissection and complications.[8]

In case of high suspicion ultrasonography should be combined with MRCP to confirm the absence of gallbladder.[8,9]

## CONCLUSION

Gallbladder agenesis should be appreciated and to be differentiated from contracted gallbladder. We should try to diagnose it pre-operatively, so that we can avoid surgery. One should check cautiously for ectopic gallbladder or agenesis in case of absent gallbladder. We should confirm the absent gallbladder with imaging modalities before converting to open cholecystectomy.

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