

## **Case Report**

# **ECTOPIC LIVER TISSUE ATTACHED TO GALLBLADDER - A RARE INCIDENTAL FINDING**

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## **ABSTRACT**

Ectopic liver tissue attached to gall bladder wall is extremely rare and uncommon entity, usually found incidentally during surgical procedures or autopsy. In most of the cases, patients are asymptomatic but rarely they may develop symptoms secondary to torsion, compression or rupture due to malignant transformation. Here we present case of a 32 year old female who presented in surgical outpatient department (OPD) with abdominal pain associated with nausea and vomiting secondary to gall stones. Elective cholecystectomy was done which revealed the presence of ectopic liver tissue mass attached to gall bladder wall by a mesenteric stalk, completely separated from liver. The mass removed in to along with gall bladder showed features of fatty liver on histopathological examination.

## **INTRODUCTION**

Ectopic liver tissue attached to the gall bladder by its own mesentery and completely detached from the liver is uncommon. As diagnosed at the time of laparoscopy or laparotomy, the incidence of ectopic liver tissue has been reported in between 0.24% to 0.47 % (Nagar *et al.*, 2011). Hepatocytes in an ectopic liver behave like normal hepatocytes and are subjected to various carcinogenic insults including both viral infections as well as chemical carcinogens that are metabolized or excreted by hepatocytes. Ectopic liver tissue lacks the complete vascular and ductal system of a normal liver thus being metabolically inactive and more prone to hepatocarcinogenesis (Arakawa *et al.*, 1999).

## **CASES**

A 32 year old female presented to surgery OPD with history of right upper quadrant pain off & on for last 6 months associated with nausea and sometimes with vomiting. She also complained of increase in frequency of pain and worsening of symptoms after fatty meals. Her past history was unremarkable. She was non diabetic and non hypertensive. Her physical examination revealed soft, non-distended abdomen with mild tenderness in right upper quadrant during deep palpation. There was no organomegaly. Her hemogram and liver function tests were within normal limit. Ultrasonography of the abdomen showed multiple gallstones with features suggestive of chronic cholecystitis. Rest of the organs scan were normal. A diagnosis of cholelithiasis with chronic cholecystitis was made and patient was planned for laparoscopic cholecystectomy.

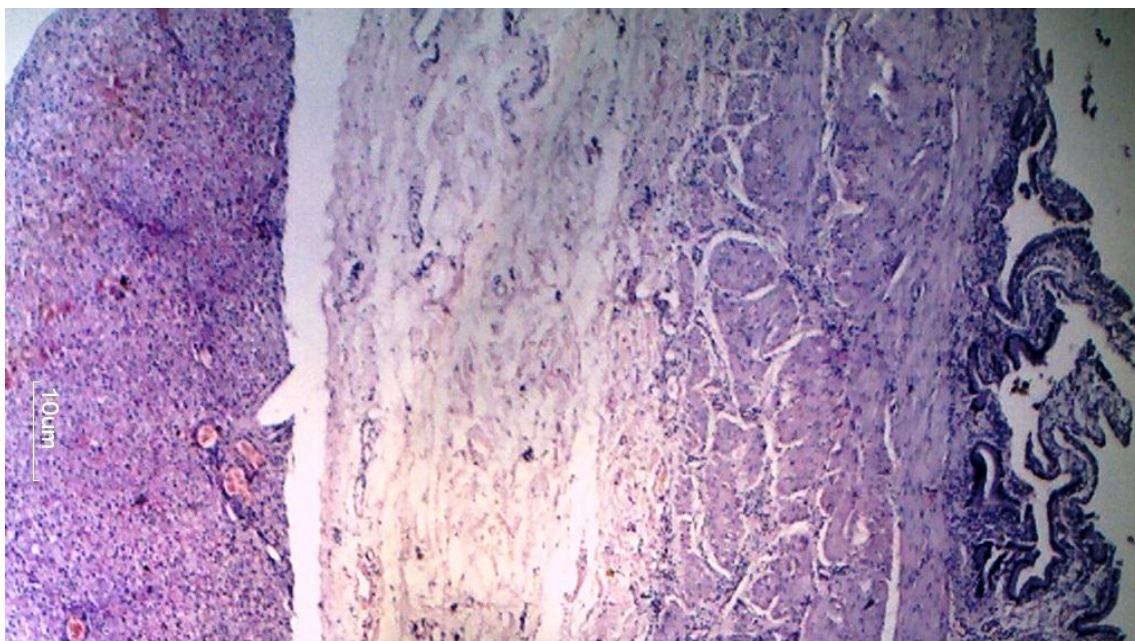
The patient underwent an elective laparoscopic cholecystectomy. Intraoperatively an ectopic liver tissue attached to the serosal surface of the body of gall bladder was seen. This liver tissue was completely separate from the native liver and attached to the gall bladder by broad mesenteric stalk. Cholecystectomy with en bloc removal of gall bladder along with ectopic tissue was done. Grossly, the gall bladder measured 7 x 2.5 cms. External surface of gall bladder showed a polypoidal brownish-black mass resembling hepatic tissue, measuring 1x 0.5cm adherent to the body of the gall bladder by a mesenteric stalk (Figure 1). The lumen of gall bladder revealed multiple yellowish gall stones. Histopathological evaluation of ectopic liver tissue showed outer capsule, portal triad along with fatty change in hepatocytes (Figure 2 & Figure 3). Gall bladder showed features of chronic cholecystitis. Thus a final diagnosis of chronic cholecystitis with cholelithiasis with fatty change in ectopic liver tissue attached to body of gall

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bladder was given. The post operative period after laparoscopic cholecystectomy was uneventful and the patient was discharged on 2<sup>nd</sup> post operative day. Now after 6 months of operation, she remains symptom free.

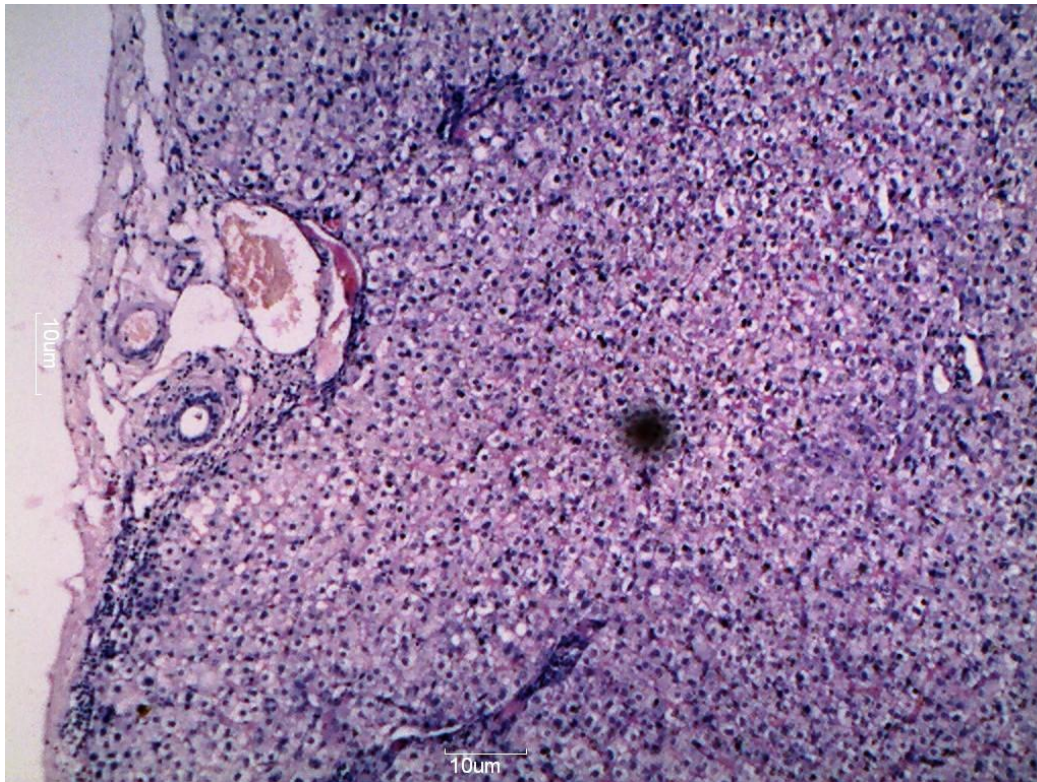


**Figure 1: Gross photograph showing ectopic liver tissue attached to the gall bladder wall**



**Figure 2: Microphotograph showing gallbladder wall with adjacent liver tissue (H&E x100)**

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**Figure 3: Photomicrograph of Ectopic liver tissue showing capsule, portal triad and fatty change in hepatocytes (H&E x 400)**

### DISCUSSION

Anatomic anomalies of the liver have been classified as Accessory lobe of liver when there is attachment to the native liver, Ectopic or heterotopic liver tissue when there is no connection to the liver proper and Aberrant microscopic tissue, in cases of ductal origin, when the tissue is present within the lumen of a true Luschka duct in the wall of gall bladder (Lundy *et al.*, 2005; Tejada *et al.*, 1989). Ectopic liver tissue is the least common abnormality and has been seen in both abdominal as well as thoracic cavity. Ectopic liver tissue attached to the gall bladder is the most common intra abdominal location. Other than gall bladder, the ectopic liver tissue has been reported in other locations such as esophagus, pericardium, pleura, falciform ligament, adrenal gland, spleen, pancreas, pylorus and umbilicus (Triantafyllidis *et al.*, 2009).

The ectopic liver tissue is usually attached to the serosa of the gall bladder or lies within its wall however ectopic liver tissue attached to the mucosal surface of the gall bladder has also been reported (Natori *et al.*, 1986). The presentation is usually asymptomatic and this entity is usually found incidentally during laparoscopy, laparotomy or autopsy. In our case also it was found incidentally during laparoscopic cholecystectomy performed for symptomatic gall stones. However, ectopic liver tissue causing recurrent abdominal pain due to torsion, hemorrhagic necrosis, compression of adjacent organs, intra peritoneal bleeding, obstruction of esophagus, portal vein, neonatal gastric outlet and pylorus have been reported by various authors (Nagar *et al.*, 2011; Triantafyllidis *et al.*, 2009; Watanabe *et al.*, 1989; Hadda *et al.*, 1985). The size of ectopic liver tissue ranges from microscopic tissue to as big as 3.7 cms (Lundy *et al.*, 2005).

Hepatocytes in an ectopic liver behave like normal hepatocytes and show similar histopathological findings as those of the main liver. Thus ectopic liver in the gall bladder can undergo fatty changes,

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hemosiderosis, cholestasis, cirrhosis, hepatitis or malignant degeneration to hepatocellular carcinoma (Martinez *et al.*, 2013). In our case ectopic liver tissue showed features of fatty change histopathologically. To the best of our knowledge, only one previous report describes fatty change in ectopic liver tissue attached to gall bladder (Eiserth, 1940). Our case happens to be the second case of ectopic liver tissue showing fatty change and is probably the first case report from India. Ectopic liver tissue is at increased risk of developing hepatocellular carcinoma. However when compared to other locations, ectopic liver tissue attached to gall bladder is least likely to undergo malignant transformation because it is an anomaly occurring later during late embryogenesis and is therefore well differentiated. This is supported by the fact that Arakawa *et al.*, (1999) in their study revealed that only one out of 33 cases of ectopic liver tissue attached to gall bladder develop cancer as compared to 22 cases out of 48 cases of ectopic liver attached to other locations develop hepatocellular carcinoma (Arakawa *et al.*, 1999). Pre-operative diagnosis of ectopic liver tissue by means of imaging studies is rare and till date a pre-operative diagnosis of gall bladder associated ectopic liver tissue was made in only two reported cases (Lundy *et al.*, 2005; Hamdani *et al.*, 1994). The small size of many ectopic livers, the lack of awareness of this unusual entity among radiologists and frequent lack of symptoms may be the reason for missed diagnosis during imaging studies. The diagnosis of ectopic liver should be considered by radiologists when a soft tissue mass arising from the gall bladder wall with imaging characteristic similar to those of liver is encountered (Hamdani *et al.*, 1994). The treatment of ectopic liver tissue is still controversial. Most of the authors recommended removal of ectopic liver tissue when found during cholecystectomy for gall bladder disease but to leave it as such if found accidentally during other procedures. To prevent the complication due to torsion and development of hepatocellular carcinoma in rare instances from ectopic liver tissue, the removal of asymptomatic ectopic liver tissue is advised by some authors (Triantafyllidis *et al.*, 2009; Griniatsos *et al.*, 2002).

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