**Case Report: A left-side gallbladder in adult male**

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**ABSTRACT**

A left-sided gallbladder is a rare condition which may be associated with several anomalies of the biliary tract and portal system. The routine preoperative ultrasound is not able to identify this ectopic gallbladder and thus the diagnosis is practically made during surgery.

A 47-year-old male patient went to the hospital reporting that he began to feel colic pain in the epigastrium, after fatty feeding and associated with nausea and vomiting. The ultrasonography showed only changes in the gallbladder wall and the CT scans images the presence of lithiasis in the gallbladder.

In the surgery, after the release of these adhesions, we visualized the gallbladder located on the left lobe of the liver and we performed laparoscopic cholecystectomy. The postoperative evolution was satisfactory without complications. The patient received hospital discharge in good clinical conditions, with the recommendation to stay in outpatient follow-up.

**Keywords:** Left-sided gallbladder, Aberrant gallbladder, Laparoscopic cholecystectomy, Sinistroposition of the gallbladder.

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**Introduction**

The gallbladder is anatomically located on the visceral surface of the liver in the middle hepatic vein line and between the IV and V liver segments. However, due to embryological different processes\(^1\) it can be found in at least, four anomalous positions: intrahepatic, transverse, retro displaced and left of the ligament round or left-sided gallbladder.\(^2\)

The left-sided gallbladder is considered the rarest, with an incidence ranging from 0.04% to 1.2%\(^1-4\), and having been first described by Hochstetter in 1856.\(^3\)**\(^5\)**\(^6\)

To be considered as a true left-sided gallbladder it is necessary to be located to the left of the falciform ligament and not to be part of the situs inversus viscerum\(^4,7-8\). According to Nagai et. als\(^8\) during fetal growth embryological changes in the development of right and left umbilical ligaments would be responsible for a “false” left-sided gallbladder. Although the gallbladder is on the left, the true change would be the position of the falciform ligament and thus this anomaly should not be diagnosed as a gallbladder on the left side, but as falciform ligament on the right side.\(^2,5,8\)

Diagnosis is practically made during surgery, since the symptoms reported by patients are similar to an anatomically normal gallbladder.\(^1,4,6,9-10\) There is a reference that even with the gallbladder on the left side the visceral nerve fibers couldn’t accuse this anomaly and thus will continue to cause pain in the right hypochondrio.\(^1\) In addition, the routine preoperative ultrasound is not able to identify the gallbladder in left-sided position\(^1,4,6,9,11,12\), however, there is a reference that with improvements in imaging diagnostic methods it is possible to diagnose this anomaly with the use of computed tomography.\(^7\)

As the diagnosis is preoperative, the surgical team should pay more attention to performing the procedure, since the left-sided gallbladder may be associated with several anomalies of the biliary tract and portal system,\(^1,6,11,13\) that can lead to iatrogenic lesions ranging from 4.4% to 7.3%\(^9,5,13\).

Several options have been suggested to minimize damage, such as placing trocars on a mirror image on the right side \(^1,9,11-13\), performing intraoperative cholangiography\(^8,11,13\), ligation of the cystic canal very close to the infundibulum\(^12\) and convert into open surgery.\(^13\) However, the surgeries performed with only one portal for the trocars did not present adverse occurrences.\(^1\)
CASE REPORT
A 47-year-old male patient reported that in May 2021 he began to feel colic pain in the epigastrium, without irradiation, after fatty feeding in association with nausea and vomiting. Denies acholia or choluria. He used homemade medication with little improvement. Sometime later he returned to feel pain and repletion when he ingested any kind of food. He was urgently treated in a private hospital, being medicated with analgesic and antiemetic. As the pain persisted, he sought care again, he did US that showed absence of intra and extrahepatic biliary tract dilation, a little distended gallbladder, thickened walls and foci of cholesterolosis on the walls. The patient was hospitalized under observation and then discharged from the hospital with the recommendation of analgesic and antiemetic use. In August 2021 the pain became stronger having been hospitalized for investigation. He underwent CT scans that showed lithiasis in the gallbladder and was indicated surgical treatment.

On physical examination he was stable, hydrated, ruddy, lungs clean, normal oropharynx, globose and flaccid abdomen, painful palpation in right hypochondrium, positive Murphy’s sign and presence of umbilical hernia. Normal vital signs and he was afibrile.

In laboratory tests no alteration was observed, as in chest X-ray, electrocardiogram and thus the patient was released for videolaparoscopic cholecystectomy.

In the cavity inventory there was adherence of epiploon, left colon and duodenum with the gallbladder. After the release of these adhesions, we visualized the gallbladder located on the left lobe of the liver. (Figure 1)

We started dissection of the Calot Triangle by identifying the cystic duct and cystic artery, which was a direct branch of the hepatic artery in a position prior to the cystic duct. After ligation of the cystic and duct artery, the gallbladder was carefully released from the hepatic bed and was removed through the umbilical scar. There were no postoperative complications, the patient fed normally and was discharged from the hospital in good clinical condition the day after surgery.

The result of histopathological examination showed a chronic cholecystitis, diffuse cholesterolosis and cholesterol polyp. No evidence of malignancy.

DISCUSSION
The left-sided gallbladder without situs inversus is rare and has a prevalence of 0.04% to 1.2%. As described in the literature, on this presented case the patient had complaints similar to that of an anatomically normal vesicle, imaging tests did not show an anomalous position of the organ and the diagnosis of left-sided position was made during surgery.

The recognition of this anomaly is important to avoid damage to the biliary tract during the performance of laparoscopic cholecystectomy, since other alterations accompany it. Despite the reference of several options to facilitate the surgical procedure, such as placing trocars in a mirror image of the rightside, intraoperative cholangiography, ligation of the cystic canal very close to the infundibulum; convert into open surgery, we performed laparoscopic cholecystectomy without altering the place of insertion of the trocars nor the number of them, we did not perform peroperative cholangiography, but the ligation of the duct and cystic artery was made close to the infundibulum. The procedure occurred without disorders, the patient progressed satisfactorily obtaining hospital discharge 24 hours after surgery.

CONCLUSION
The left-sided gallbladder is a rare anomaly, difficult to preoperative diagnosis and requires much attention and knowledge from the surgeon so that damage to the biliary tract does not occur during surgery.

Conflict of interest - None

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