Case Report

A rare case report: left-sided gall bladder without situs inversus viscerum

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ABSTRACT

Left-sided gall bladder without situs inversus viscerum is a rare clinical entity. A left-sided gall bladder is a rare congenital anomaly defined as a gall bladder attached to the lower surface of the left lateral segment of the liver, to the left of the inter-lobar fissure and round ligament. We reported our experience of one cases of left-sided gall bladder in a woman aged 45 years who underwent laparoscopic cholecystectomy for acute calculous cholecystitis. Left-sided gall bladder may provide an unusual surprise to the surgeons during laparoscopy as routine pre-operative studies may not always detect the anomaly. Awareness of the unpredictable confluence of the cystic duct into the common bile duct (CBD) and selective use of intraoperative cholangiography aid in the safe laparoscopic management of this unusual entity. One previous case reported had shown cystic duct opened into the common hepatic duct on its right side in a patient with left sided gall bladder.

Keywords: Gall bladder anatomy, Situs inversus viscerum

INTRODUCTION

In an era in which laparoscopic cholecystectomy has become the gold standard for treatment of acute cholecystitis, knowledge of developmental anomalies of the gallbladder and biliary system is essential in order to avoid intraoperative injury to bile duct.¹

A left-sided gall bladder is a rare congenital anomaly defined as a gall bladder attached to the lower surface of the left lateral segment of the liver, to the left of the inter-lobar fissure and round ligament. This gall bladder is situated under the left lobe of the liver between segments III and IV or on segment III to the left of the falciparum ligament. Left-sided gall bladder is a physiologic condition when identified before surgery, must be

properly evaluated with the use of computed tomography (CT) or magnetic resonance imaging (MRI), when incidentally discovered during surgery must be promptly recognized by the surgeon who must be aware of the unpredictable confluence of the cystic duct into CBD. If in doubt, the surgeon should perform an intraoperative cholangiography. We reported one adult patient in whom left-sided gall bladder was found incidentally, intraoperatively and managed successfully.

CASE REPORT

A 45 year old female presented with complaints of right upper abdominal pain associated with vomiting for 2 days. There was no history of jaundice or hospitalization. On examination her systemic examination was normal.

Abdominal examination elicited tenderness in right upper abdomen. Murphy's sign was positive. No icterus. haemogram, kidney function tests and liver function tests were normal. Ultrasonography of the abdomen showed distended gall bladder with multiple calculus seen in gall bladder lumen at fundus with thick walled gall bladder, pericholecystic fluid was present. Intrahepatic biliary radicles (IHBR) and CBD were normal. A laparoscopic cholecystectomy was planned and performed using standard 4-port technique. Pneumoperitoneum was created by open technique. Other 3 ports placed under vision. Intra operatively we found gall bladder on the left of falciform ligament. Rests of the abdominal viscera were normally positioned. Calot's triangle was frozen, not able to dissect. Hence fundus first dissection was done in view of unclear anatomy at Calot's triangle due to left sided gall bladder. Gall bladder dissected till neck, gall bladder opened, all stones removed and ligated at neck using endoloop. Drain was placed in gall bladder fossa. Port closure was done. Postoperative course of the patient was uneventful. Histopathological examination revealed features suggestive of acute cholecystitis. Follow up of the patient was unremarkable.

Figure 1: Gall bladder on left to falciform ligament.

Figure 2: Gall bladder on left site of falciform and undersurface of liver.

DISCUSSION

Malposition of the gall bladder occurring in the absence of situs inversus is very rare anomaly. Two types of malpositions are known. They are medio-position and sinistro-position (true left-sided gall bladder).²

In medio-position, the gall bladder is displaced medially to lie on the undersurface of the quadrate lobe (segment

IV) but is still on the right side of the round ligament. In sinistro-position, the gall bladder lies under the left lobe (segment III) to the left of the round ligament. Hochstetter first described a case of sinistro-position in 1886.³ Since then 149 cases have been reported till 2002.⁴ In a multi-center series of laparoscopic cholecystectomies, the prevalence of sinistro-position was 0.3%.²

There are two explanations of left-sided gall bladder development: the gall bladder migrates to a position under the left liver, that is, to the left of the round ligament and the location of the cystic duct is normal and a second gall bladder develops directly from the left hepatic duct, accompanied by failure of development of the normal structure on the right side.

In sinistro-position, the cystic artery always crosses in front of the CBD from right to the left. The cystic duct may open on the left or right side of the common hepatic duct or on to the left hepatic duct directly.²

As routine pre-operative studies may not detect the anomaly, it may provide the surgeons with an unusual surprise during laparoscopy. When incidentally discovered during surgery it must be promptly recognized by the surgeon, who must be aware of the unpredictable confluence of the cystic duct into CBD and should limit the use of diathermy and avoid division of structures until a clear picture of the bile duct and blood vessels is obtained.

In our cases retrograde dissection of the gall bladder was done due to frozen Calot's and unclear anatomy and gall bladder was ligated at neck after removing stones. Post-operative course of the patients was uneventful.

If in doubt, the surgeon should perform an intraoperative cholangiogram to further define the biliary system. Open surgery should be considered if the anatomy still remains unclear.

CONCLUSION

Left-sided gall bladder without situs inversus is a rare clinical entity and can provide an unusual surprise to the surgeons during laparoscopy. Awareness of unpredictable confluence of cystic duct into the CBD, selective use of intraoperative cholangiography and modification of the technique aid in safe laparoscopic management of this unusual anomaly.

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