Case Report

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Complete gallbladder duplication – Seventh report in world literature

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ABSTRACT

Gallbladder duplication results from a rare abnormality of embriogenesis[1] and is twice as common in women as in men[2].The signs and symptoms of double gallbladder cholecystitis are the same as those of single gallbladder cholecystitis: strong pain in the epigastric region and right hypochondrium, which may irradiate to the back and be accompanied by nausea and/or vomiting, Murphy positive sign, and pain on palpation of these regions; plastron may also be present[3]. For this reason, many cases are still diagnosed intraoperatively, making surgery difficult and increasing the possibility of biliary tract injury. We report the case of a female patient with epigastric and dorsal pain for 4 days, which worsened with the ingestion of salty and fatty foods and was accompanied by nausea and vomiting. Physical examination showed a positive Murphy sign. A complete abdominal ultrasound examination showed gallbladder duplication, both lithiasic. Magnetic resonance cholangiography confirmed the duplication of the gallbladder and cystic ducts, with a single main biliary tract and acute lithiasic cholecystitis in both gallbladders. A laparoscopic cholecystectomy of both vesicles was performed without complications, and the patient was discharged 3 days after the procedure.

Keywords: *Cholelithiasis; double gallbladder; anatomical variation; laparoscopic cholecystectomy*

Gallbladder duplication results from an abnormality of embryogenesis[1]. It is quite rare, occurring in about 1 of 4,000 births[4], and is twice as common in women as in men[2]. Although diagnosis is increasing due to improved imaging techniques, most cases are still diagnosed intraoperatively, making surgery difficult and increasing the possibility of biliary tract injury.

Patients with gallbladder duplication should be treated surgically, even when asymptomatic, due to possible complications of gallbladder inflammation[1]. However, it is of paramount importance to perform reference tests for the study of the biliary tract, such as magnetic resonance cholangiography and endoscopic retrograde cholangiopancreatography, in order to reduce the risks of surgical conversion to open cholecystectomy, as well as the risks of biliary tract injury.

CASE REPORT

A 13-year-old female patient presented to the emergency department with epigastric and dorsal pain for 4 days, intermittently, which worsened with the ingestion of salty and fatty foods and was accompanied by nausea and vomiting. She reported having had a similar episode about a month, previously, which improved with the use of symptomatic drugs.

On physical examination, the patient was tachycardic, febrile, with a painful abdomen on palpation of the right hypochondrium and a positive Murphy sign. A complete abdominal ultrasound examination showed a double gallbladder, with associated acute lithiasic cholecystitis in both. Magnetic resonance cholangiography confirmed the duplication of the gallbladder

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and cystic ducts, with a single main biliary tract, and acute lithiasic cholecystitis in both gallbladders.

An uneventful laparoscopic cholecystectomy was performed, and the patient was discharged home on the third postoperative day. The anatomopathological findings were compatible with acute chronic cholecystitis and cholesterolosis in both gallbladders and reactive lymphadenopathy in both resected lymph nodes.

DISCUSSION

Gallbladder duplication results from an abnormality of embryogenesis 5 to 6 weeks of gestation[1]. It occurs in about 1 of 4,000 births[3] and is twice as common in women as in men[2].

Although an association of gallbladder duplication with other congenital abnormalities has not been proven, some alterations have been reported along with duplication. Juillerat et al.[5] reported the case of a child with gallbladder duplication in association with heterotopic gastrointestinal mucosa and pancreatic microclusters. The hypothesis was aberrant migration of gastrointestinal tissue[1]. In addition, gallbladder duplication was also described in association with scimitar syndrome and gastrointestinal atresia[1].

Even when asymptomatic, duplication should be treated surgically due to possible complications of inflammation[1]. It should also be carefully examined, as it may be associated with cholangiocarcinoma[6].

Although the detection of gallbladder duplication is increasing due to the growing influence of imaging methods[1], surgeons need to pay attention to the rare anatomical variations of the gallbladder, which are usually not diagnosed, preoperatively, thus increasing surgical difficulty and risks[3,7] and requiring intraoperative cholangiography if the anatomy is unknown. Anatomical variations detected only intraoperatively often lead to conversion to open cholecystectomy, which potentially increases the risk of biliary tract injury[7].

The gold standard method for studying the biliary tract and diagnosing its anomalies is endoscopic retrograde cholangiopancreatography[2]. However, because it is an invasive method, magnetic resonance cholangiography has been more widely used. In the present case, the diagnosis of double gallbladder as well as the study of the biliary tract with magnetic resonance cholangiography were performed preoperatively, which facilitated surgery and reduced the risk of biliary tract injury.

Due to serious complications associated with possible biliary tract, injury, more specific investigation should be conducted to better evaluate the biliary anatomy in the presence of ultrasound evidence of alterations, such as magnetic resonance cholangiography and endoscopic retrograde cholangiopancreatography, order to reduce the risks of biliary tract injury.

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