Double Trouble - Duplication of the Gallbladder Requiring Repeat Laparoscopic Cholecystectomy

Abstract:

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Abstract

Duplication of the gallbladder is a surprisingly common phenomenon. Clinically, these patients present with straightforward gallbladder pathologies. It is a challenging preoperative diagnosis on ultrasound, and most cases are diagnosed intra-operatively. We present a case of gallbladder duplication, where the patient presented with biliary colic, had a straightforward laparoscopic cholecystectomy, and then represented with biliary colic four years later.

Introduction

Duplication of the gallbladder is a surprisingly common phenomenon, with a frequency of 1/4000 at autopsy. Clinically, these patients present with straightforward gallbladder pathologies including biliary colic and acute cholecystitis. Preoperative ultrasound successfully identifies approximately 50% of cases and it is a challenging diagnosis reports in the literature of associated anatomical variations of critical importance as patients are more likely to suffer biliary duct or vascular injury. We present a case of duplication of the gallbladder where the second gallbladder was not noted at the original surgery.

Case Report

A 20 year old patient presented to her local emergency department with severe episodic epigastric pain, related to food. An abdominal ultrasound confirmed the presence of gallstones. The patient underwent an uneventful laparoscopic cholecystectomy and histologically, the specimen was identified as a 5.2cm gallbladder removed in its entirety. Interestingly, no gallstones were found in this specimen. Histological analysis confirmed a gallbladder with moderate inflammation. The patient was discharged from hospital without complications. Four years later however, she developed similar symptoms as before. Abdominal ultrasound showed a cystic structure on the inferolateral border of the liver, with hyperechogenicity at the neck and posterior acoustic shadowing characteristic of cholelithiasis (Figure 1).

Magnetic Resonance Cholangiography (MRCP) using a half-Fourier single-shot turbo spin echo (HASTE) sequence demonstrated a gallbladder (Figure 2) containing a signal void at the gall bladder neck consistent with a gallstone. Having discussed the results with the surprised patient we proceeded to repeat laparoscopic cholecystectomy. The gallbladder was identified and noted to be largely intrahepatic and difficult to dissect from the liver bed. No clips or cystic duct stump were identified from the previous surgery, however it is unknown whether the original clips used were absorbable or not. The procedure and postoperative course were uneventful.

Discussion

Gallbladder duplication is thought to be due to exuberant budding of the developing biliary tree when the caudal bud of the hepatic diverticulum divides. It can be subdivided according to Harlaftis' classification system. Characteristic features on ultrasound include two cystic structures visible in the gallbladder fossa, with isolated contraction of one. ERCP or MRCP can diagnose this pathology with much greater accuracy. A number of case reports discuss duplication of the gallbladder detected either at the time of preoperative ultrasound or intra-operatively. In these instances, it was deemed feasible to proceed with a laparoscopic cholecystectomy. In our review of the literature we also found 12 cases where the second gallbladder was missed on the initial procedure, and the patient required repeat laparoscopic cholecystectomy. The need to convert to an open procedure is understandably unavoidable at times although it is not always necessary.

We demonstrate that duplicate gallbladders can be missed at the time of original surgery and that repeat laparoscopic cholecystectomy is a safe and effective treatment for this anomaly. Also of note, the specimen from the original procedure contained no gallstones. This suggests that the gallbladder responsible for the patients symptoms was not the one removed at the original operation and perhaps could have alerted us to the possibility of a second gallbladder.

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Comments: