

Case Report

A Patient with a Septated Gallbladder Imitating a Gallbladder Tumor

Knut Selsas^{1*}, Eystein Arnø², and Ola Røkke^{1,3}¹Department of Gastrointestinal Surgery, Akershus University Hospital, Norway²Department of Radiology, Akershus University Hospital, Norway³Faculty of medicine, University of Oslo, Norway***Corresponding author**

Knut Selsas, Department of Gastrointestinal Surgery, Akershus University Hospital, P.O Box 1000, 1478 Lørenskog, Norway, Tel: +47 02900; Email: knut.selsas@ahus.no

Submitted: 16 June 2017

Accepted: 28 July 2017

Published: 31 July 2017

Copyright

© 2017 Selsas et al.

ISSN: 2573-1564

OPEN ACCESS**Keywords**

- Septate gallbladder
- Bilobed gallbladder
- Accessory gallbladder
- Duplicated gallbladder
- Cholecystectomy

Abstract

Introduction: Although septated gallbladder is well known in the literature, a definitive preoperative diagnose can be difficult, and surgery may be challenging. Awareness of this anomaly is important in the evaluation of pathology in the biliary tree.

Case presentation: We present a case who presented with biliary colic, where preoperative radiological evaluation was inconclusive, and a tumor in the gallbladder was suspected. Laparoscopy revealed a gallbladder resembling the hourglass deformity, which was resected without complications.

Discussion: The cause of biliary colic is usually stones in a single gallbladder. Gall bladder aberrations, gallbladder folds, vessels traversing the gallbladder, gallbladder diverticulum and bilobed gallbladder are infrequent. A definitive preoperative diagnose of these rare conditions is made in only 50% of cases even with the use of ultrasonography, CT and MRI. Gallbladder-aberrations may also be asymptomatic and discovered during radiological investigation of abdominal pain. In the present case, a gallbladder tumor was suspected preoperatively, but a septated gallbladder in which one compartment contained a char-like mass mimicking a tumor on radiological investigation was found during surgery. Meticulous laparoscopic surgical resection was performed with an uneventful recovery.

Conclusion: The case illustrates one of several anatomic variants one may encounter during biliary surgery. High awareness during surgery and knowledge of anatomical variations is necessary to avoid complications.

INTRODUCTION

Septated gallbladder is one of the many gallbladder anomalies encountered during evaluation of pathology in the biliary tree. Although well known in the literature, a septated gallbladder as a cause of biliary colic is rare. The septate gallbladder is usually asymptomatic or discovered during radiological evaluation of abdominal pain [1]. A definitive preoperative diagnose can be difficult, and surgery may be challenging.

CASE PRESENTATION

A female, 41 year old, was referred to our hospital with a two month history with four attacks of biliary colic. Ultrasonography (US) showed a 10 x 15 x 25 mm hyper-echoic lesion in the gallbladder where a tumor was suspected. The patient had previously been operated due to a ventral hernia, and also operated with abdominal plastic surgery due to rectal diastasis with narrowing of the rectus sheath. These operations were performed two and five years before the present admission. She had also undergone investigation due to low abdominal pain the

previous year, with gastroscopy and colonoscopy, and Fecal-test, which were all negative.

Further investigation with abdominal computed tomography (CT) showed an oval, clearly defined structure occupying the fundus of the gallbladder like an intraluminal tumor (Figure 1). There was no breakthrough of the gallbladder wall and no contrast enhancement. A large gallbladder-polyp or a gallbladder stone could be suspected. Magnetic Resonance Imaging (MRI) and Magnetic Resonance Cholangio Pancreaticography (MRCP) showed a clearly defined lesion in close connection to the fundus of the gallbladder, without contrast enhancement (Figure 2). There was no dilatation of the intra- or extrahepatic bile ducts. There was no signal on diffusion sequences and ADC bore resemblance to liver tissue. Low signal on T2 sequence (Figure 3). The lesion seemed benign. A cystic mass with high protein content could be a differential diagnosis, but the lesion was atypical. Laparoscopy revealed a septated gallbladder with hourglass deformity (Figure 4). After careful dissection of Calot's triangle, body and fundus, a single cystic duct was identified, and cholecystectomy was performed.



Figure 1 Computed Tomography, axial plane, contrast enhanced portovenous phase. A high attenuating lesion (blue arrow), indicating high protein content, is seen lateral to the gallbladder (red arrow).

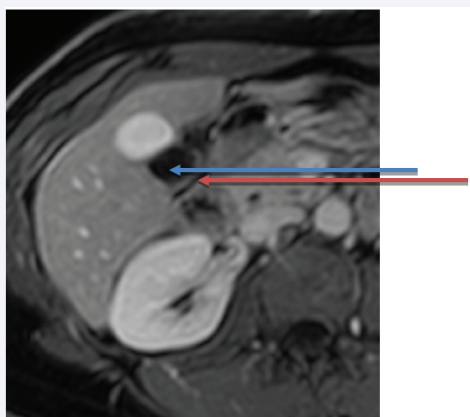


Figure 2 Magnetic resonance, axial plane, T1 weighted fat suppressed with contrast.

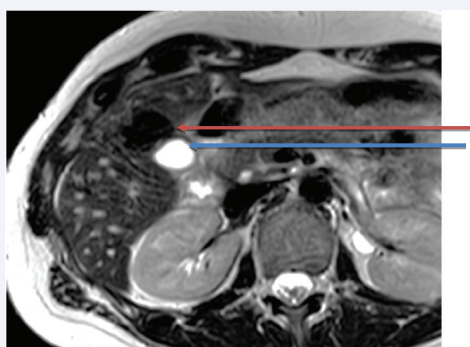


Figure 3 Magnetic resonance axial plane T2 weighted. The lesion (red arrow) gives a low signal while the normal part of the gallbladder (blue arrow) gives a high signal.

Gross examination of the specimen showed a transverse septum with no visible communications between the two lobes (Figure 5). The gallbladder measured 6 cm in total length. The proximal part contained clear bile, no bile stones. The distal part contained a thick, tar-like black semifluid mass without

bile stones. Histopathological evaluation showed fibrosis and localised muscular hyperplasia with structural development and cystic rebuilding of the fundus part, measuring 4 cm. No signs of chronic cholecystitis in either compartment. The patient recovered uneventfully, and was discharged the second postoperative day.

DISCUSSION

During evaluation of pathology in the biliary tree one may encounter multiple anomalies and anatomic variants. When the preoperative diagnosis is not clear it is important to keep these in mind to avoid complications during surgery. Septate gallbladder is characterised by the presence of a septum dividing the gallbladder in two chambers [2]. When the septum dividing the gallbladder lies longitudinally it is called bilobed gallbladder and when there is a transverse septum separating the fundus from the rest of the gallbladder it is called an hourglass gallbladder [3]. These gallbladder septa are most commonly single, but multi septate gallbladder, as well as post inflammatory adhesions and compartmentalisation of the gallbladder have also been described [4]. Bilobed gallbladder is a rare congenital anomaly, occurring in about 1:4000 births [6]. There are several reports describing the pathophysiology and treatment of this condition [2,6,7,8,9]. Although described in the literature, due to the low frequency, few radiologists and surgeons have experience with this condition, and a definitive preoperative diagnosis is challenging. Anatomic variants of gallbladder duplication are classified according to Boyden's classification [6] as follows: a) vesica fella divisa (bilobed or bifid gallbladder, double gallbladder with a common neck, b) vesica fella duplex (double gallbladder with two cystic ducts) of two types: i) Y-shaped type (the two cystic ducts uniting before the common bile duct) ii) H-shaped type (ductular type, the two cystic ducts entering separately into the biliary tree). The classification of Herlaftis is also commonly used [10].

Gall bladder aberration may present with several clinical pictures. Most are probably asymptomatic, and may be discovered in a routine medical checkup with ultrasonography [11]. Clinical presentation with acute biliary colic [12], as on the present paper, acute cholangitis [13], gallstone pancreatitis [5], porcelain gall bladder [14], and jaundice [15] have been reported [5,11,12,13,14,15]. Preoperative radiological investigation fail to diagnose the biliary aberration in 50% of cases [16]. Drip-infusion cholecysto cholangiography-computed tomography (DIC-CT) have been reported to successfully diagnose gall bladder duplication [11]. Differential diagnosis of bilobed gallbladders are gallbladder folds, vessels traversing the gallbladder, choledochus cyst, hepatic cyst, gallbladder diverticulum and duodenal duplication cyst [17]. Accessory gallbladders may be missed during surgery, as location may vary considerably: either intrahepatic, sub-hepatic, within the gastro-hepatic ligament, or beside the main gallbladder [12]. It is important to recognise the gall bladder pathology early during surgery, so that care can be taken not to accidentally injure the biliary system. When in doubt, intraoperative visualisation of the biliary tree with per-operative cholangiography is recommended by several authors [12]. Once identified, aberrations often lead to conversion to open surgery. Gallbladders with anomalous anatomy are often

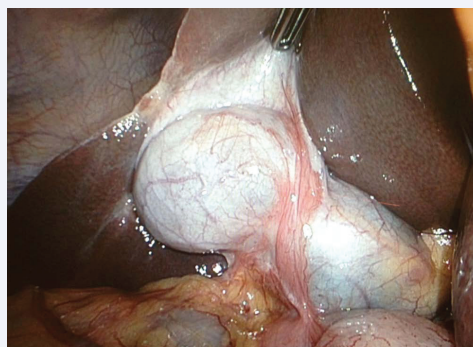


Figure 4 Perioperative laparoscopic view of the gallbladder. One clearly sees that the gallbladder is divided/narrowed in the middle part, the hourglass form. Important also to note that it is clear that the radiologically described lesion is clearly part of the gallbladder, not the liver..



Figure 5 The gallbladder removed. The proximal moiety on the left with a clip on the cystic duct.



Figure 6 The proximal moiety cut open. Containing clear bile, no stones identified, no clear communication with the distal moiety.

otherwise normal, but chronic cholecystitis, ectopic thyroid tissue [18] and cholangiocarcinoma [14,19] have been described. In our case, preoperative investigation was not conclusive, though a benign tumor of the gallbladder was suspected, creating the indication for surgery. Bearing in mind the possibility of duplication of the gallbladder, we meticulously searched for

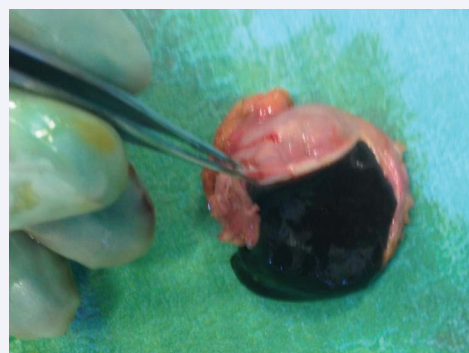


Figure 7 The distal moiety cut open, containing thick, almost tar like, content. No stones detected.

an aberrant cystic duct or other communication to the liver or biliary tree, which was not found. Laparoscopic cholecystectomy was safely performed. Examination of the gallbladder showed a single transverse septum dividing the gallbladder into two parts. The distal compartment contained a char-like viscous fluid, with no communication to the normal part of the gallbladder with the cystic duct, thus imitating the tumor visualised on preoperative imaging.

CONCLUSION

Septated gallbladder is one of the infrequent anatomic variants which may be encountered during biliary surgery. Laparoscopic cholecystectomy is a safe method in this situation.

CONSENT

The paper contains no personally identifiable information. The CT- and MRI-scans are anonymised. The same is true for the two pictures: One taken during laparoscopic surgery and one taken after surgery of the gross-examination of the specimen. Therefore no formal consent is required.

REFERENCES

1. Gross RE. Congenital anomalies of the gall bladder: A review of 148 cases, with report of double gall bladder. *Arch surg.* 1936; 131-162.
2. Patel NR, Joshipura VP, Hariphakti SP, Soni HN. Septate gallbladder in the laparoscopic area. *J Minim Access Surg.* 2008; 4: 20-22.
3. Flannery MG, Caster MP. Congenital hour-glass gall bladder. *South Med J.* 1957; 50: 1255-1258.
4. Adear H, Barki Y. Multi septate gall bladder in a child: Incidental diagnosis on sonography. *Paediatr Radiol.* 1990; 20: 192.
5. Walbolt TD, Lalezaradeh F. Laparoscopic management of a duplicated gallbladder: a case study and anatomic history. *Surg Laparosc Endosc Percutan Tech.* 2011; 21: e156-158.
6. Boyden EA. The accessory gallbladder: an embryological and comparative study of aberrant biliary vesicles occurring in man and the domestic mammals. *Am.J of Anatomy.* 1926; 38: 177-231.
7. Desolneux G, Muci S, Lebigot J, Arnaud JP, Hamy A. Duplication of the Gallbladder. A case report. *Gastroenterol Res Pract.* 2009; 2009: ID 483473
8. Ozmen V, Gorgun E, Unal ES, Polat C, Oxmen T. Laparoscopic treatment of a bilobed gallbladder: A case report and review of the literature.

- Surg Laparosc Endosc Percutan Tech. 2003; 13: 345-347.
9. Vijayaraghavan R, Belagavi CS. Double gallbladder with different disease entities: A case report. J Minim Access Surg. 2006; 2: 23-26.
10. Herlaftis N, Gray SW, Skandalakis JE. Multiple gallbladders. Surg Gynecol Obstet. 1977; 145: 928-934.
11. Shiba H, Misawa T, Ito R, Ohki K, Igarashi T, Yanaga K. Duplicated gallbladder. Int Surg. 2014; 99: 77-78.
12. Cozacov Y, Subhas G, Jacobs M, Parikh J. Total laparoscopic removal of accessory gallbladder: A case report and review of literature. World J Gastrointest Surg. 2015; 7: 398-402.
13. Ozaki N, Hashimoto D, Ikuta Y, Chikamoto A, Takamori H, Baba H. Definitive diagnosis of a duplicate gallbladder can only be made intraoperatively: report of a case. Clin J Gastroenterol. 2014; 7: 338-341.
14. Torres D, Parrinello G, Trapanese C, Cardillo M, Licata G. Porcelain and duplicated gallbladder associated with pancreatic cancer. Intern Emerg Med. 2011; 6: 567-568.
15. Görkem SB, Doğanay S, Kahrman G, Küçükaydın M, Coşkun A. Acute cholecystitis of a duplicated gallbladder with double cystic duct in a 10 year old boy. Balkan Med J. 2014; 31: 366-367.
16. Botsford A, McKay K, Hartery A, Hapgood C. MRCP imaging of duplicate gallbladder: a case report and review of the literature. Surg Radiol Anat. 2015; 37: 425-429.
17. Menon P, Rao KL, Thapa BR, Goyal R, Garge S, Rathore MK, et al. Duplicated gall bladder with duodenal duplication cyst. J Pediatr Surg. 2013; 48: e25-8.
18. Manohar B. Kachare, Ashish Khandelwal, Sanjay B. Kulkarni, Sachin S. Saboo. Ectopic thyroid in duplicated gall bladder: a rare entity. Case report. Med Ultrason. 2013; 15: 73-75.
19. Kin Y, Yamaguchi A, Isogai M, Hori A. Duplication of the gallbladder with advanced adenocarcinoma: diagnostic value of MRI and angiography. Hepatogastroenterology. 1996; 43: 405-408.

Cite this article

Selsas K, Arnø E, Røkke O (2017) A Patient with a Septated Gallbladder Imitating a Gallbladder Tumor. JSM Gen Surg Cases Images 2(4): 1036.