

Multiseptate Gallbladder with Recurrent Abdominal Pain. A Case Report and Literature Review.

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Abstract

Background: Chronic abdominal pain is a common disorder in children and adolescents worldwide. In attacking this problem, the pediatrician often concentrates on the gastrointestinal or genitourinary tract as a source of the pain. Too little attention is paid to the gallbladder as the cause of pain in this age group.¹ We report a 6-year-old girl who presented with recurrent abdominal pain and was diagnosed as having a multiseptate gallbladder (MSG). MSG, although rare, should be considered in the differential diagnosis of patients presenting with recurrent abdominal pain and abdominal ultrasonography should form part of the investigation.

Keywords: gallbladder, abdominal pain, ultrasonography.

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Full Text

Introduction

The multiseptate gallbladder is one of the rarest congenital malformations of the gallbladder. The first detailed description of a multiseptate gallbladder appeared in the radiologic literature in 1963.² The presenting features include abdominal symptoms such as right upper abdominal pain, nausea, and vomiting. The patients with MSG may also be asymptomatic and can be diagnosed incidentally during ultrasonography (USG) examination. In this case presentation, we aimed to present a patient with a multiseptate gallbladder who presented with recurrent abdominal pain.

Case report

A 6-year-old girl with recurrent abdominal pain of about 6 months duration was admitted to our hospital. Starting as a dull ache in the right upper quadrant of the abdomen, with no radiation to the back, the right shoulder, and the interscapular area, the pain persisted, its intensity varying from mild to moderate. There were no associated fever, nausea, vomiting, itching, or jaundice. The physical examination and laboratory studies such as complete blood count, liver function tests, electrolytes, and urinalysis revealed no specific abnormality. The sonographic examination of the abdomen was performed with a 3.5- MHz convex transducer and a 7.5-MHz linear transducer. USG examination performed in supine and left decubitus

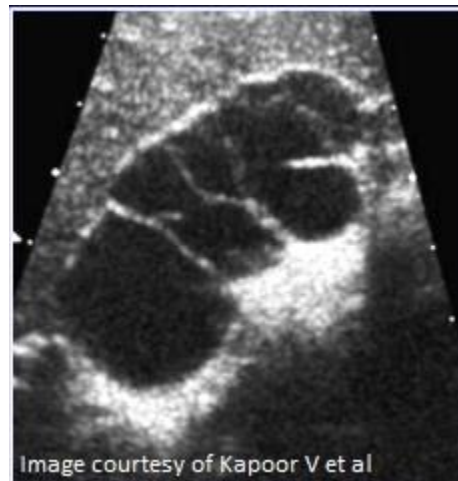
posture with full inspiration. The intercostal approach was performed when necessary. On sonographic examination, the gallbladder showed multiple linear echoes, consistent with septa projecting into the lumen, some of which crossed the lumen and connected to the opposing walls mimicking a honey-comb pattern. There was no evidence of gallbladder wall thickening, gallstones or dilatation of the bile ducts. Based on these USG findings, the diagnosis of a multiseptate gallbladder was made. The patient was referred to the gastroenterology clinic.

Discussion

The multiseptate gallbladder is thought to be a congenital malformation, although the embryogenetic mechanism is not clear. Simon and Tandon proposed that, this was due to incomplete vacuolation of the developing gallbladder. Bhagavan et al.³ have suggested that, MSG may be a result of the solid embryonic gallbladder growing faster than its bed and investing peritoneum, causing aberrant bends and kinks. The same authors also postulated that, a variation in the wrinkling, lobulation, and clefting of the gallbladder (seen in cat and guinea pig embryos) may result in MSG^{3,4}. Asymptomatic patients are very rare in the literature⁵. Clinically, most patients present with colicky pain suggestive of cholecystitis, usually in the right upper quadrant or in the epigastrium, or long term abdominal symptoms such as right upper quadrant tenderness, recurrent abdominal pain, nausea and vomiting, and gastrointestinal complaints. It has been

postulated that, the symptoms are produced because of a transient inability of thick bile to pass through the small openings between the septa, resulting in stasis and increased intraluminal pressure of the gallbladder^{6,7}. USG examination of the gallbladder is usually sufficient to diagnose MSG, although other modalities such as computed tomography, magnetic resonance cholangiopancreatography (MRCP) and endoscopic retrograde cholangiopancreatography have been described to establish the diagnosis⁸. In patients with multiseptate gallbladder, sonography demonstrates multiple linear, fine echogenic bands without acoustic shadowing or septa crossing the lumen of the gallbladder, giving the organ a honeycomb appearance⁹. MSG, especially in childhood, may coexist with choledochal cysts¹⁰, thus a detailed radiological examination of the hepatobiliary system is needed to exclude a choledochal or pancreatic pathology. Cholelithiasis^{11,12} and acute acalculous cholecystitis¹³ are the other two complications of MSG. Except for biliary tract anomalies, a relationship between cholangiocarcinoma and MSG is also known^{14,15}. Regarding the potential associated anomalies and risk of cancer, regular follow-up is undoubtedly substantial in an asymptomatic patient with MSG. On sonographic examination, desquamated gallbladder mucosa and the hyperplastic cholecystoses must be considered in the differential diagnosis. Desquamated gallbladder mucosa is seen as multiple linear echoes in the gallbladder lumen which do not arise from the wall of the gallbladder and the clinical setting is

compatible with acute cholecystitis¹⁶. The appearance of polypoid cholesterosis and adenomyomatosis may mimic multiseptate gallbladder, but there is no bridging of the gallbladder lumen by the cyst-like Rokitsansky-Aschoff sinuses or polypoid bulbous echoes. A hydatid cyst should also be considered in the differential diagnosis. Cholecystectomy provides the relief of the symptoms in symptomatic patients with MSG¹⁷, while nonoperative management with regular follow-up is reasonable in the absence of the symptoms attributable to the MSG or an associated biliary tract anomaly⁴. Cholecystectomy should also



be considered in elderly, asymptomatic patients in whom MSG is incidentally discovered, due to the possibility of undetected carcinoma of the gallbladder¹⁸. In conclusion, MSG, although rare, should always be considered in the differential diagnosis of children presenting with recurrent attacks of abdominal pain. Recurrent abdominal pain in childhood due to gallbladder is often misinterpreted as being due to intestinal and genitourinary etiologies. Cholelithiasis and cholecystitis are very rare before puberty and, if present, they are mostly

related to bacterial and parasitic infections, hemolytic conditions and chronic gastrointestinal diseases¹⁹. We think that the cause of recurrent abdominal pain in our patient was the mechanical effect of septa impairing bile flow. As these septa do not contain muscle fibers, difficulty in bile flow is a consequence of the impaired motility of the gallbladder. Multiseptate gallbladder, although rare, should also be borne in mind among the etiologic factors of recurrent abdominal pain, and abdominal ultrasound should form part of the investigation.

References

1. HASLAM RHA, GAYLER BW, EBERT PA. Multiseptate Gallbladder: A Cause of Recurrent Abdominal Pain in Childhood. *Am J Dis Child*. 1966;112(6):600-603. doi:10.1001/archpedi.1966.02090150144021
2. Simon M, Tandon BN. Multiseptate gallbladder. *Radiology* 1963;80:84-86
3. Bhagavan BS, Amin PB, Land AS, Weinberg T. Multiseptate gallbladder: embryogenetic hypotheses. *Arch Pathol* 1970;89:382-85.
4. Wanaguru D, Jiwane A, Day AS, Adams S. Multiseptate Gallbladder in an Asymptomatic Child. *Case Rep Gastrointest Med*. 2011;2011:470658.
A. Ozgen, D. Akata, and M. N. Ozmen, "Case report: multiseptate gallbladder," *Turkish Journal of Diagnostic*
Interventional Radiology, vol. 5, p. 496, 1999.
5. Strauss S, Starinsky R, Alon Z. Partial multiseptate gallbladder: sonographic appearance. *J Ultrasound Med* 1993;12:201-03.
6. Demirpolat G, Duygulu G, Tamsel S. Multiseptate gallbladder in a child with recurrent abdominal pain. *Diagn Interv Radiol* 2010;16:306-07.
7. Karaca T, Yoldas O, Bilgin BC, Bilgin S, Evcik E, Ozen S. Diagnosis and Treatment of Multiseptate Gallbladder with Recurrent Abdominal Pain. *Case Rep Med* vol. 2011;2011:162853.
8. Lev-Toaff AS, Friedman AC, Rindsberg SN, et al. Multiseptate gallbladder: incidental diagnosis on sonography. *AJR Am J Roentgenol* 1987; 148:1119.
9. Pery M, Kaftori JK, Marvan H. Ultrasonographic appearance of multiseptate gallbladder: report of a case with coexisting choledochal cyst. *J Clin Ultrasound* 1985;13:570-73.
10. Erdogmus B, Yazici B, Ozdere BA, Akcan Y. Clinical and ultrasonographical findings in patients with multiseptate gallbladder. *Tohoku J Exp Med* 2004;204:215-19.
11. Croce EJ. The multiseptate gallbladder. *Arch Surg* 1973;107:104-05.
12. Erdogmus B, Yazici BB, Safak AA, Ozdere BA. Multiseptate gallbladder with acute acalculous cholecystitis. *J Clin Ultrasound* 2004;32:423-24.

13. Ono S, Sakai K, Kimura O, Iwai N. Development of bile duct cancer in a 26-year-old man after resection of infantile choledochal cyst. *J Pediatr Surg* 2008;43:17-19.
14. Nakazawa T, Ohara H, Sano H, et al. Multiseptate gallbladder: diagnostic value of MR cholangiography and ultrasonography. *Abdom Imaging* 2004;29:691-93.
15. Wales LR. Desquamated gallbladder mucosa: unusual sign of cholecystitis. *AJR Am J Roentgenol* 1982; 139:810-811.
16. Bigg RL. Multiseptate gallbladder. *Arch Surg* 1964;88:501-02.
17. E. Y. Rivera-Troche, M. G. Hartwig, and S. N. Vaslef, "Multiseptate gallbladder," *Journal of Gastrointestinal Surgery*, vol. 13, no. 9, pp. 1741-1743, 2009.
18. Esper E, Kaufman DB, Crary GS, et al. Septate gallbladder with cholelithiasis: a cause of chronic abdominal pain in a 6-year-old child. *J P*
19. *J Pediatr Surg* 1992; 27:1560-1562.