Multiseptate Gallbladder with Cholelithiasis Diagnosed Incidentally in an Elderly Patient

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Abstract

A 70-year-old woman with rheumatoid arthritis was admitted to our hospital because of gastric ulcers. Abdominal echography incidentally revealed that the patient's gallbladder was multiseptate, an extremely rare anomaly. The diagnosis was confirmed by endoscopic retrograde cholangiography. This is the 26th case of multiseptate gallbladder in the world literature, but the patient is the oldest yet recorded with this condition. Furthermore, unlike most patients with multiseptate gallbladder, she had no biliary symptoms with concomitant cholelithiasis. (Internal Medicine 39: 1054–1059, 2000)

Key words: primary biliary cirrhosis, chronic hepatitis C

Introduction

Multiseptate gallbladder is an extremely rare anomaly characterized by the presence of multiple thin septa dividing the gall bladder lumen into several chambers. Right upper quadrant pain suggestive of cholecystitis is frequently associated with this anomaly, although coexistence of cholelithiasis has seldom been reported (1–3). The mean age at diagnosis is less than 40 years and in fact children are sometimes affected (4, 5). Here we describe a 70-year-old woman who was found incidentally to have a multiseptate gallbladder. She had been totally asymptomatic in spite of concomitant cholelithiasis, primary biliary cirrhosis and chronic hepatitis C.

Case Report

A 70-year-old woman was referred to our division on April 22, 1997, because of black stools that had continued for several days. She had undergone blood transfusion 40 years previously following a traffic accident. About 15 years later, cholelithiasis had been discovered on an abdominal X-ray film,

but there were no biliary symptoms and therefore no further investigation was performed. She had been suffering from rheumatoid arthritis for more than 20 years, and receiving several forms of medication including non-steroidal anti-inflammatory drugs (NSAIDs). She had never drunk alcohol.

At presentation she appeared well and had no abdominal symptoms. Her height was 143 cm and weight 38 kg. Physical examination revealed deformities of the bilateral proximal finger joints, but no abnormal findings in the abdomen. Laboratory data disclosed hypochromic microcytic anemia and mild hepatic abnormality, especially elevation of serum alkaline phosphatase (Table 1). HCV antibody and HCV-RNA were positive. Anti-mitochondrial antibody and anti-M2 antibody were present, but the patient had no history of pruritus or jaundice.

Gastrointestinal fiberoscopy demonstrated multiple deep gastric ulcers but no esophageal varices. After the patient had been hospitalized, NSAIDs were discontinued and administration of an H₂ receptor antagonist was started, resulting in amelioration of the gastric ulcers. Ultrasonographic examination of the abdomen incidentally revealed multiple fine septations in the gallbladder with a honeycomb appearance, together with a gallstone (Fig. 1). The gallbladder was normal in size without wall thickening. Computed tomographic scan confirmed the multicystic appearance of the gallbladder with a calculus, as well as mild hepatosplenomegaly (Fig. 2). An oral cholecystocholangiogram demonstrated radiolucent multiple thin septa within a well opacified gallbladder (Fig. 3). There was good gallbladder contraction after ingestion of egg yolk. Endoscopic retrograde cholangiography (ERC) clearly showed at least six septations subdividing the gallbladder, especially in the body and fundus (Fig. 4). One round filling defect representing a stone was also detected in one of the chambers. A smooth indentation observed on the extrahepatic bile duct at the porta hepatis and minor irregularities in the peripheral intrahepatic bile ducts suggested a cholangiographic feature of primary biliary cirrhosis (6, 7). In the process of gallbladder filling during ERC, the separate chambers were visualized not simultaneously but in order, one after the other. Based on these

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Multiseptate Gallbladder

Table 1. Laboratory Data on Admission

Occult blood in stool		Biochemistry		Serology	
Orthotolidine	(+)	Total protein	7.4 g/dl	C-reactive protein	2.2 mg/dl
Guaiac	(+)	γ -globulin	38.3%	Immunoglobulin G	335 mg/dl
Peripheral blood		Total bilirubin	0.39 mg/dl	Immunoglobulin A	440 mg/dl
Red blood cell	356×10^4	Direct bilirubin	0.12 mg/dl	Immunoglobulin M	278 mg/dl
Hemoglobin	10.4 g/dl	Aspartate aminotransferase	31 IU/l	Rheumatoid factor	>1:320
Hematocrit	32.5%	Alanine aminotransferase	20 IU/l	Antinuclear antibody	(-)
Mean corpuscular volume	76.1 fl	Lactate dehydrogenase	249 IU/l	Antimitochondrial antibody	>1:160
Mean corpuscular hemoglobin	22.2 pg	Alkaline phosphatase	357 IU/l	Anti-M2 antibody	78.4 U/ml
Platelet	15.8×10^4	γ -glutamyltranspeptidase	42 IU/l	Antismoothmuscle antibody	(-)
White blood cell	5,100/ μ l	Leucin aminopeptidase	91 IU/l	Anticentromere antibody	(-)
Coagulation		Cholinesterase	198 IU/l	Hepatitis B surface antigen	(-)
Prothrombin time	12.8 s	Amylase	125 IU/l	Hepatitis C antibody	(+)
Fibrinogen	436 mg/dl	Total cholesterol	152 mg/dl	Hepatitis C RNA	110 Kcopy/ml
Hepaplastin test	81%	Triglyceride	81 mg/dl	Carcinoembryonic antigen	1.5 ng/ml
Erythrocyte sedimentation rate	24 mm/h	Blood urea nitrogen	18 mg/dl	Carbohydrate antigen 19-9	<10 U/l
		Creatinine	0.4 mg/dl	α -Fetoprotein	2.8 ng/ml
		Sodium	141 mEq/l	ICG _{R15}	9.4%
		Potassium	3.7 mEq/l		
		Chloride	106 mEq/l		
		Calcium	8.4 g/dl		

ICG_{R15}: indocyanine green retention rate at 15 minutes.

A

B

Figure 1. Ultrasonographic appearance of the gallbladder. Multiple thin septations are demonstrated in the gallbladder with a honeycomb appearance (A). Solitary gallstone casting a discrete acoustic shadow is also evident (B).

Figure 2. CT scan of the abdomen shows a multicystic appearance of the gallbladder with a calculus (arrowhead). Hepatosplenomegaly is also observed.

A

B

Figure 3. Oral cholecystogram. Multiple radiolucent septations and a radioopacified stone are detectable within the gallbladder (A). Good contraction occurs after ingestion of egg yolk (B).

findings, a diagnosis of multiseptate gallbladder was made. Since the patient had been totally asymptomatic, we did not recommend cholecystectomy.

During the period of hospitalization, liver biopsy was per-

formed to investigate the patient's hepatic abnormality. The portal tract was enlarged by a lymphoid aggregate with occasional disruption of the limiting plate of hepatocytes. Interlobular bile duct damage was prominent, with surrounding lym-

Figure 4. Endoscopic retrograde cholangiography demonstrates at least six septa dividing the gallbladder into multiple chambers. The solitary gallstone is identified as a filling defect.

phocytes and plasma cells (Fig. 5). These findings were compatible with stage II primary biliary cirrhosis (8). Concomitant chronic hepatitis due to HCV infection was also suggested on the basis of the histological and serological findings. According to the new Inuyama classification of chronic hepatitis staging and grading categories revealed F1 and A1 respectively (9).

After two weeks of admission the patient was discharged under medication with ursodeoxycholic acid and an H_2 receptor antagonist. During a follow-up period of 2 years in our out-patient department, the patient has remained asymptomatic.

Discussion

Gallbladders containing one to three septa are not unusual, being seen in approximately 4% of all patients undergoing cholecystography (10). However, multiseptate gallbladder is quite a rare anomaly. To our knowledge, the present case is the 26th described so far in the world literature, since the first description by Simon and Tandon (11) in 1963 (Table 2). The exact mechanism responsible for the genesis of multiseptation is not clear. However, it is speculated that wrinkling and infolding seen in the gallbladder buds of cat and guinea-pig embryos or formation of the so-called Phrygian cap in human embryos may be related to this phenomenon (15).

A review of the 26 cases revealed a female predominance

Figure 5. Needle biopsy of the liver (HE stain, ×80). The portal tract is enlarged with prominent interlobular bile duct damage. The infiltrating inflammatory cells consist of lymphocytes and plasma cells.

(male : female; 1 : 3.3) and a mean patient age of 32 years (range 8–70 year). The coexistence of biliary symptoms with multiseptate gallbladder has been well established, and most patients have colicky biliary pain suggestive of cholecystitis. However, histologically confirmed acute cholecystitis or ac-

Table 2. Reported Cases of Multiseptate Gallbladder

Author (Reference)	Year	Age	Sex	Biliary symptoms	Concomitant biliary disease	Cholecystectomy
Simon (11)	1963	32	F	+	—	+
Bigg (12)	1964	38	M	+	—	+
Haslam (13)	1966	15	F	+	—	+
Sachsse (14)	1968	50	M	+	—	—
Bhagavan (15)	1970	27	F	+	Hypoplasia of gallbladder	+
Croce (1)	1973	45	F	+	Cholelithiasis	+
Codinach (2)	1975	28	F	+	Cholelithiasis	+
Shaw (16)	1975	31	F	+	—	+
Konishi (17)	1977	51	F	+	—	+
Jena (18)	1977	28	F	+	Hypoplasia of gallbladder	+
Okuda (19)	1979	38	M	+	—	+
Alawneh (3)	1981	44	F	+	Cholelithiasis	+
Toombs (20)	1982	22	F	+	—	+
Oliva (21)	1985	24	F	+	—	+
Pery (22)	1985	8	F	+	Choledochal cyst	+
Lev-Toaff (23)	1987	30	M	—	—	—
Lev-Toaff (23)	1987	23	F	—	—	—
Fremond (4)	1989	13	F	+	—	+
Adear (24)	1990	12	F	—	—	—
Isomoto (25)	1990	43	F	+	—	+
Vasinrappee (26)	1990	24	M	+	—	not described
Tan (5)	1993	14	F	+	Choledochal cyst	+
Hahm (27)	1994	49	F	+	—	—
Naritomi (28)	1994	45	F	+	—	+
Saimura (29)	1996	30	M	+	—	+
Present case	1999	70	F	—	Cholelithiasis, PBC	—

companying cholelithiasis are very infrequent in patients with multiseptate gallbladder. Only four patients, including the present one, had gallstones (1–3). The optimal treatment of symptomatic patients with multiseptate gallbladder is considered to be cholecystectomy, and the patients who underwent this operation were invariably relieved of biliary pain.

The present 70-year-old female patient was by far the oldest of all those reported to date. Because she had been totally asymptomatic and had never undergone examination of the gallbladder, this congenital anomaly may have been left overlooked for a long period. It has been postulated that pain in patients with multiseptate gallbladder is due to mechanical problems. Transient inability of the viscid bile to pass through small openings in the septa may result in stasis, incomplete emptying and increased intraluminal pressure (15). Only four of the patients with multiseptate gallbladder, including the present one were asymptomatic (23, 24). Since the previous three patients were less than 30 years old, with a possibility of developing symptoms in the future, our 70-year-old patient provides good evidence that this clinical entity can sometimes remain entirely asymptomatic.

Except for gender and age, the established risk factors such as obesity, family history, hypertriglycerimemia, and multiparity did not explain the occurrence of cholelithiasis in this patient. Association between rheumatoid arthritis and cholelithiasis has

never been evident, although ingestion of NSAIDs is reported to prevent cholelithiasis (30, 31). Several studies have demonstrated a high prevalence of gallstones in patients with liver cirrhosis, especially primary biliary cirrhosis (6, 32, 33). The present patient had two concomitant chronic liver diseases: asymptomatic primary biliary cirrhosis and chronic hepatitis C. These two liver disorders probably had little relationship with the genesis of cholelithiasis, because the gallstone had been present for more than 20 years and thus occurred earlier than any possible lithogenic effect of chronic liver disease, considering the minimal degree of liver damage at presentation.

Calculus formation might be a more frequent finding in older patients with multiseptate gallbladder. In fact, the mean age of the four patients exhibiting cholelithiasis was higher than that of the other patients without cholelithiasis. Croce (1) proposed that the anomaly may become manifest at an earlier age than calculus disease because of the underlying mechanical problems of bile concentration and stasis in the various chambers.

We have thus presented a rare case of multiseptate gallbladder with a full description of the characteristic radiologic features and a review of the related literature. This case was unique in that the patient was elderly and asymptomatic with cholelithiasis.

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