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A Case of Simultaneous Xanthogranulomatous Cholecystitis and Carcinoma of the Gallbladder

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Xanthogranulomatous cholecystitis (XGC) is a rare inflammatory disease of the gallbladder. Not only does XGC occasionally present as a mass formation with adjacent organ invasion like a malignant neoplasm, it can also infrequently be associated with gallbladder cancer. In the situation, it is difficult to make a differential diagnosis between the diseases. Here, we describe a case of a simultaneous XGC and a carcinoma of the gallbladder in a 61-year-old woman. To the best of our knowledge, there are only a small number of reports on this combination of diseases.

Key Words: Cholecystitis, Xanthogranulomatous; Gallbladder neoplasms

INTRODUCTION

Xanthogranulomatous cholecystitis (XGC) is an unusual, destructive, inflammatory disease of the gallbladder. It is believed to be a variant of chronic cholecystitis and is characterized by distinct pathologic findings on a gross and microscopic inspection[1-14]. Even though XGC is a benign condition, it is often confused with gallbladder cancer. So, it is very difficult to make a preoperative differentiation between the two lesions. Recently, we experienced a case of a simultaneous XGC and a carcinoma of the gallbladder that initially was suspected of being XGC with multinodular growth.

CASE

A 61-year-old woman was referred to the Department of Internal Medicine with a gallbladder mass. During the last month, she had suffered from intermittent epigastric discomfort. A physical examination upon admission revealed a 3 cm×4 cm-sized, soft mass with a mild tenderness on the right upper quadrant. A laboratory examination revealed a hemoglobin level of 10.5 g/dL; white blood cell count, 7,620/mm^3; platelet count, 355,000/mm^3; albumin, 4.3 g/dL; total bilirubin, 0.3 mg/dL; AST, 17 IU/L; ALT, 12 IU/L; alkaline phosphatase, 64 IU/L and amylase, 88 IU/L. The serum CEA was 3.17 ng/mL (normal range, 0 to 5 ng/mL) and CA 19-9 was 80.17 U/mL (normal range, 0 to 37 U/mL). An abdominal CT revealed multiple thickenings of the gallbladder wall with intramural low attenuated nodules. At the neck portion, irregular wall thickening was also found. There was no evidence of a gallstone or mass, even if both intrahepatic and extrahepatic bile ducts were slightly dilated (Figure 1). An abdominal ultrasonograph also revealed a mild distension of the gallbladder and an approximately 12 mm segmental wall thickening of the neck portion (Figure 2). Endoscopic retrograde cholangiography was performed. The gallbladder itself did not fill with the contrast medium as a result of a complete obstruction of the cystic duct at the proximal portion (Figure 3). In the view of the radiological studies, xantho-

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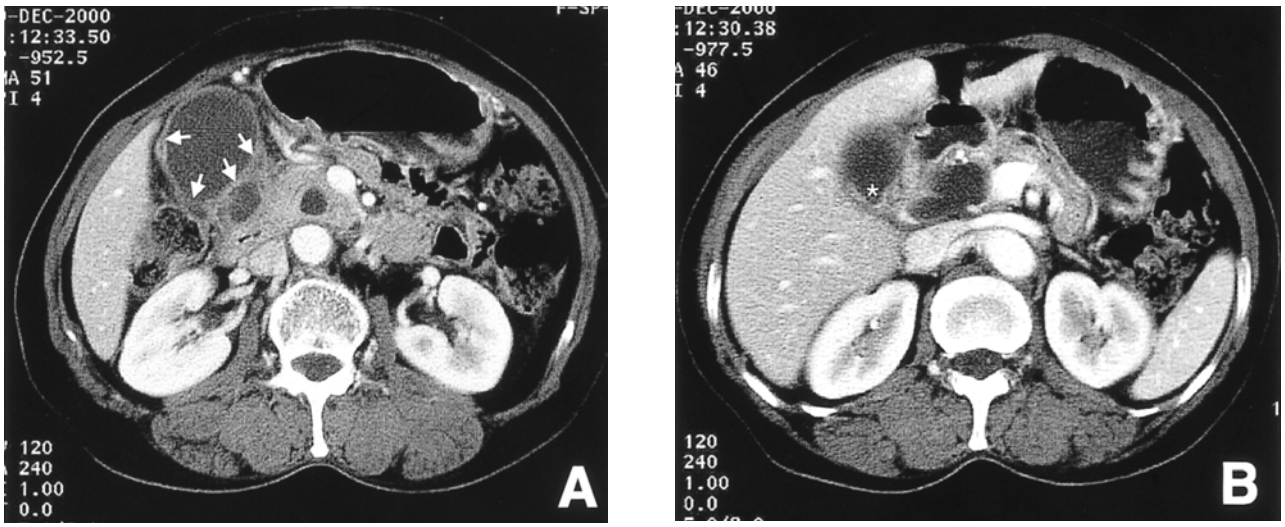

Figure 1. Computed tomographic scan of the abdomen demonstrates multiple thickenings of the gallbladder wall with intramural hypoattenuated nodules (arrows), which were subsequently demonstrated to be the result of a xanthogranulomatous inflammation (A). At the neck of the gallbladder, a focal irregular thickening of the wall is also noted (asterisk). This proved to be a carcinoma (B).

granulomatous cholecystitis was initially suspected. However, it was difficult to completely rule out an associated gallbladder cancer. During surgery, the gallbladder was found to be distended and filled with pus-like fluid. The serosal surface of the body and fundus was attached to the omentum and the first portion of the duodenum. In particular, the gallbladder neck and the proximal portion of the cystic duct were strongly adhered to the surrounding tissue, including the right lateral aspect of the common hepatic duct. The right hepatic artery was also encased. Histopathology revealed a well-differentiated adenocarcinoma that infiltrated the full thickness of the muscular layer and an associated severe desmoplastic reaction and infiltrates of chronic inflammatory cells at the gallbladder neck. The other portion of the gallbladder wall showed multifocal different-sized nodules of xanthogranulomatous inflammation, consisting mainly of foamy histiocytes and admixed inflammatory cells (Figure 4).

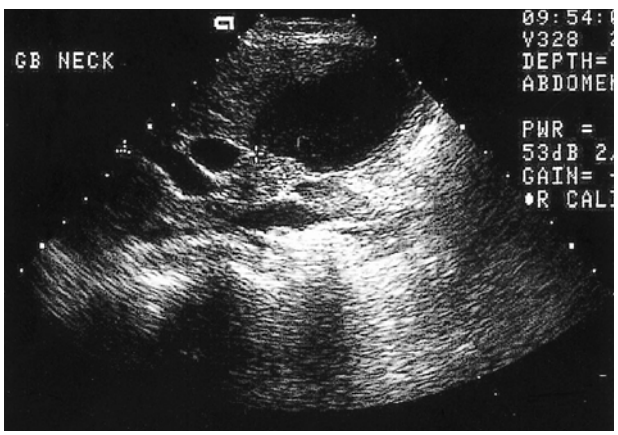

Figure 2. Ultrasonography of the gallbladder reveals a segmental wall thickening of the neck portion, subsequently proven to be a carcinoma.

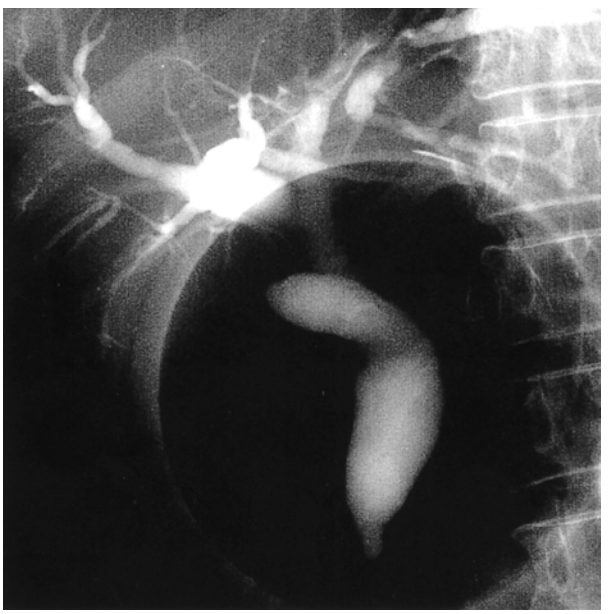

Figure 3. Endoscopic retrograde cholangiography reveals a complete obstruction of the cystic duct at the proximal portion. Therefore, the gallbladder does not fill with the contrast medium.

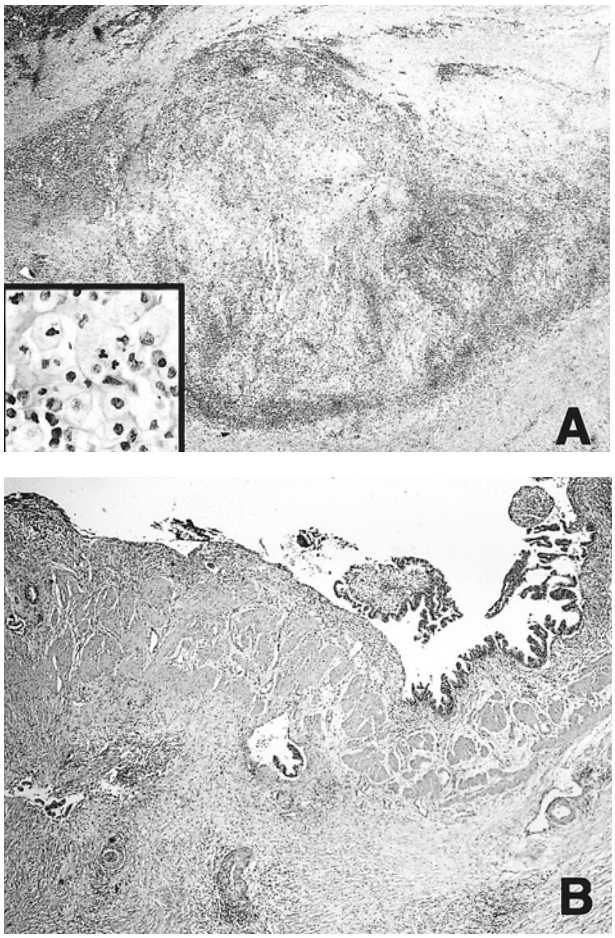

Figure 4. Photomicrographs show a large xanthogranulomatous nodule (H&E stain, ×20), consisting mainly of foamy histiocytes (H&E stain, ×400, inset) (A). The adenocarcinoma is noted at the gallbladder neck, which extends to the perimuscular connective tissue on the background of a muscular hypertrophy and a severe desmoplastic reaction (H&E stain, ×200) (B).

DISCUSSION

XGC is believed to be an uncommon form of inflammatory disease of the gallbladder. The condition is characterized histologically by varying degrees of a chronic or acute inflammatory cell infiltration, as well as many macrophages containing lipids, and fibrosis during the later stages[1-14]. It mainly affects middle-aged women with gallstones[3, 7, 9, 13]. There is a paucity of reports on the overall incidence of XGC, though there are several reports on selected cases[3, 7, 11]. Retrospective estimates of the occurrence of XGC in large studies with surgically resected gallbladders range from 1.3% to 5.2%[4, 9, 11], while the incidence appears to be somewhat higher in the Indian population[3]. The pathogenesis of this lesion is not well understood, although it is believed that a rupture of the Rokitansky-Aschoff sinuses with extravasation of bile in the interstitial tissues and consequent xanthogranulomatous inflammatory reaction are the initial causes[11, 13, 14]. In general, XGC presents a variety of patterns ranging from minute xanthogranuloma foci to mass formation in the center of the gallbladder. Occasionally, the lesion is associated with tumor formation, and adhesions to the adjacent organs may give rise to a suspicion of a malignant neoplasm[3, 5, 7, 8, 11-13]. The relationship between XGC and a carcinoma of the gallbladder is unclear. It may simply be that XGC and adenocarcinoma are both complications of cholelithiasis and cholecystitis of a particular duration or degree, or that tissue disruption by a carcinoma facilitates the entry of bile into the stroma[15]. As in the present case, an obstruction of the cystic duct by a neoplasm may also initiate the histiocytic inflammatory process of XGC[1]. The association is important because when both lesions are present in the same specimen, the carcinoma may be overlooked altogether, or the extent of the tumor over- or under-estimated. Prior to a pathologic diagnosis, XGC is occasionally difficult to differentiate from gallbladder cancer, and several studies have been performed to solve this problem. Krishnani et al. reported that fine-needle aspiration cytology plays an important role in making a preoperative diagnosis of gallbladder mass lesions, especially coexistent lesions[1]. Yoshida et al. also studied the clinical factors in order to differentiate XGC from cancer. They found that findings of a nonvisualized gallbladder on cholangiography and cholelithiasis in combination and an operative aspirate of pus or nothing from within the gallbladder favor the diagnosis of an XGC over carcinoma[4]. Unfortunately, their findings were not consistent with those of our case.

In conclusion, although XGC is not believed to be a premalignant lesion, not only can XGC imitate a carcinoma in various ways, it can also be associated with a primary adenocarcinoma of the gallbladder[1, 3, 13, 15, 16]. Furthermore, it is difficult to make a preoperative differentiation between the two lesions. Therefore, it is important to be aware of the possible coexistence of XGC and cancer in the same gallbladder.

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