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□ Case Report □

Xanthogranulomatous Cholecystitis Mimicking Gallbladder Cancer

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담낭암 양상을 보인 황색 육아종성 담낭염

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We present a case of xanthogranulomatous cholecystitis which involved the liver and clinically mimicked gallbladder carcinoma, and review the associated literature. A 72-year-old woman was admitted to our hospital because of intermittent, right upper quadrant, abdominal pain. Computed tomography showed a large-mass in the gallbladder with findings that seemed to indicate invasion of the liver. During laparotomy, the gallbladder showed signs of chronic cholecystitis, and a cholecystectomy was performed. Histopathological diagnosis was xanthogranulomatous cholecystitis. **(J Korean Surg Soc 2002;63:441-444)**

Key Words: Xanthogranulomatous cholecystitis, Gallbladder cancer
중심 단어: 황색 육아종성 담낭염, 담낭암

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INTRODUCTION

Xanthogranulomatous cholecystitis is an uncommon, focal or diffuse destructive inflammatory disease of the gallbladder that is assumed to be a variant of chronic cholecystitis. The first documented case of xanthogranulomatous cholecystitis was described in 1976 by McCoy et al. (*1*) Histologically, abundant foamy macrophages intermingled with lymphoplasmacytic cells with localized accumulation in the gallbladder wall. (*2,3*) Xanthogranulomatous cholecystitis is occasionally difficult to differentiate from gallbladder cancer and mandates efforts to avoid extensive operations. In some cases, show a macroscopic appearance which may lead to suspicion of a gallbladder neoplasm with the consequent contraindication of the laparoscopic approach. We experienced a case of xanthogranulomatous cholecystitis mimicking gallbladder cancer.

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CASE REPORT

A 72-year-old female was admitted to our hospital with intermittent right upper quadrant abdominal pain. Whereas she had no fever, a cholecystitis was suspected. Physical examination demonstrated no palpable mass in gallbladder region. The white blood cell (WBC) count was 7,400/ mm^3 with a normal differential count. Hemoglobin was measured at 9.9 g/ dl. The data of blood chemistry were within normal range except alkaline phosphatase, 352 IU/ L and preoperative serum carbohydrate antigen 19-9 (CA 19-9) level was 22.92 U/ mL. Ultrasonography showed moderate wall thickening and more prominent hypoechoic mass-like lesion in the gallbladder fundus wall (Fig. 1). Computed tomography showed a large gallbladder with 11×7×5 cm sized ill-defined mass, a thickened wall and the infiltration of the adjacent liver with findings that seemed to indicate hepatic invasion (Fig. 2). A presumptive

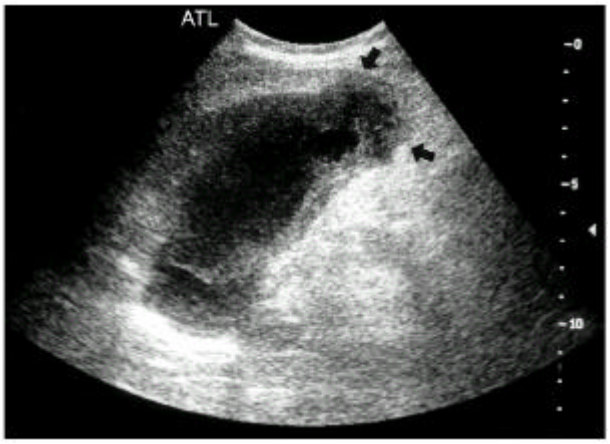

Fig. 1. Longitudinal US image of the gallbladder shows moderate wall thickening and more prominent hypoechoic mass-like lesion (arrows) in the gallbladder fundus wall.

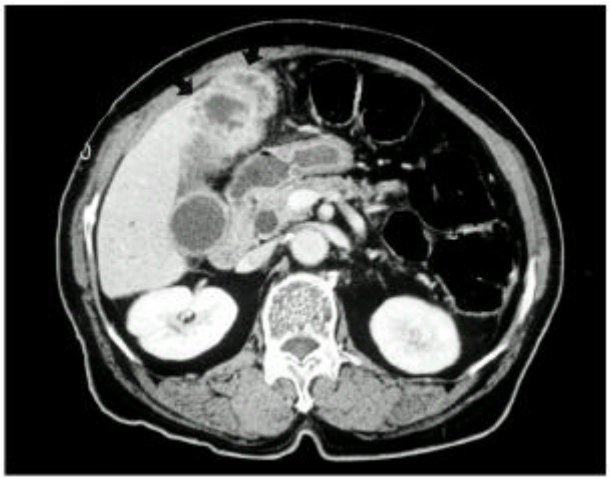

Fig. 2. CT scan showed that a large gallbladder, a thickened wall and an infiltration of the adjacent liver with findings (arrows) that seemed to indicate hepatic invasion.

diagnosis of a gallbladder cancer with hepatic invasion was made. After admission, the clinical symptom was not improved, At laparotomy the gallbladder was firmly bound to the duodenum and transeverse colon by dense fibrous adhesions. On the surgical exploration of the gallbladder, the gallbladder was severely inflammed and adherent to liver. The gallbladder was excised by cholecystectomy with adjacent liver wedge resection. The cut section findings of the mass showed a markedly thickened wall with necrotic and purulent material. The purulent fluid filled up the gallbladder. Culture of the content was not performed. A histological

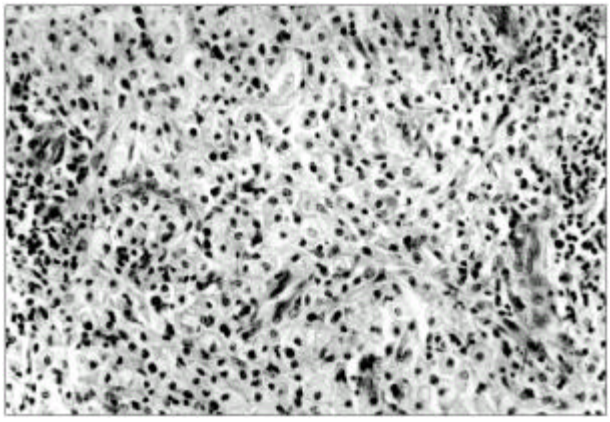

Fig. 3. Histologic finding shows foamy histiocytes mixed with lymphocytes, plasma cells, and foreign body giant cells (hematoxylin-eosin, ×200).

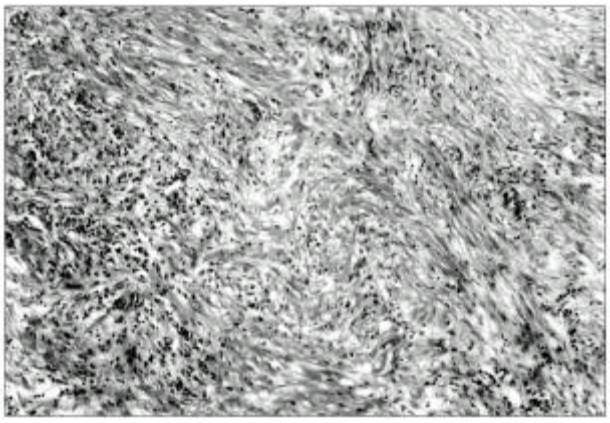

Fig. 4. Histologic finding shows fibroblasts and histiocytes arranged in bundles and, in some areas, producing a storiform pattern (hematoxylin-eosin, ×100).

examination indicated xanthogranulomatous cholecystitis based on the findings of a granulomatous lesion in the gallbladder wall (Fig. 3, 4). She was discharged at fourteenth hospital day postoperatively without any problems. The patient has remained asymptomatic through weekly follow ups for two months.

DISCUSSION

A diverse spectrum of benign tumors and tumor-like lesions arise from the gallbladder and bile ducts. Despite of their diversity, these lesions share common embryologic origins and histologic characteristics. Although these lesions are relatively

uncommon, their importance lies in their ability to mimic malignant lesions in these locations. Benign neoplasms are derived from the epithelial and nonepithelial structures that compose the normal gallbladder and bile ducts. The epithelium gives rise to adenomas, cystadenomas, and the unusual condition of biliary papillomatosis. Granular cell tumors, neurofibromas, ganglioneuromas, paragangliomas, and leiomyomas are examples of benign tumors that may originate from nonepithelial structures. Tumor-like lesions are more commonly found in the gallbladder and include xanthogranulomatous cholecystitis, adenomyomatous hyperplasia, cholesterol polyps, and heterotopias. According to McCoy et al, (*1*) the first reported case of xanthogranulomatous cholecystitis dates back to 1976. Many additional cases have been described since then. But, A case of xanthogranulomatous cholecystitis mimicking gallbladder cancer is not common.

The incidence of xanthogranulomatous cholecystitis was 2.7 5.2%, (*4-7*) and identified with a male/ female ratio of 1/ 1.8 and a mean age of 71±9 years. The most frequent form of presentation observed was hepatic cholic (43%). (*4*)

The pathogenesis of xanthogranulomatous cholecystitis is a granulomatous inflammation characterized by accumulation of macrophages. macrophages derived foam cells and activated T cells. It suggested that delayed type hypersensitivity reaction of cell mediated immunity is operative in the pathogenesis of xanthogranulomatous cholecystitis. (*7*)

The clinical manifestations of xanthogranulomatous cholecystitis are similar to those of other forms of cholecystitis. Mori et al. (*8*) have reported that xanthogranulomatous cholecystitis may be categorized into the subacute and chronic form, according to the clinical course of 4 weeks duration. Accumulation of ceroid pigment in the cytoplasm of foamy macrophages was characteristically seen in 16 of 20 chronic lesions. Three subacute lesions with ceroid pigmentation were negative for the bacterial antigens. Like this, xanthogranulomatous cholecystitis can be divided into two forms: subacute and chronic, and the subacute form is closely related to bacterial infection. Microscopically, it is characterized in the early stage by a large number of foamy histiocytes and acute inflammatory cells. In the later stages increased fibrosis can be observed. (*3*)

Xanthogranulomatous cholecystitis is a rare inflammatory disease of the gallbladder. In severe cases, inflammation extends to adjacent structures, and xanthogranulomatous cholecystitis is sometimes confused with a malignant neoplasm. Although the preoperative imaging diagnosis of xanthoganulomatous cholecystitis is difficult, the presence of hypoechoic nodules or bands in the gallbladder wall on sonography or of a hypodense band around the gallbladder on CT, is highly suggestive of this disease. (*9*) When intramural hypoattenuated nodules occupy a large area of the thickened gallbladder wall on CT finding, xanthoganulomatous cholecystitis can be highly suggestive. (*10*) Despite the characteristic histologic appearance of xanthogranulomatous cholecystitis, radiologic findings are nonspecific, varying from simple cholecystitis to a gallbladder neoplasm. The radiologic differential diagnosis includes the more frequently encountered inflammatory conditions of the gallbladder, adenomyomatosis, other hepatobiliary malignancies, and metastatic disease.

Fine needle aspiration cytology (FNAC) plays an important role in the preoperative diagnosis of adenocarcinoma, xanthogranulomatous cholecystitis and coexistent lesions. The probability of detecting malignancy is greater than with xanthogranulomatous cholecystitis in coexistent lesions. Thus, a preoperative FNAC diagnosis would help in determining the urgency of treatment and in planning for the surgical procedure in gallbladder lesions. (*11*)

In terms of tumor marker, some cases showed increased serum CA19-9. Adachi et al. (*12*) reported three cases of xanthogranulomatous cholecystitis with an increased serum CA19-9. Clinicians must remember that xanthogranulomatous cholecystitis is a possible cause of the increased serum CA19-9 levels. Our case is within normal range in serum CA19-9.

Especially, associated gallbladder cancer is sometimes present in a few patients, elderly women with relatively shorter duration of symptoms have a greater chance of associated gallbladder cancer. (*13*) This report suggested that additional long-term follow-up studies will be necessary to define the

precancerous potential of xanthogranulomatous cholecystitis. The correct diagnosis of xanthogranulomatous cholecystitis is important for some reasons, high frequency of complications of the disease and the preoperative suspicious diagnostic malignancy. The new laparoscopic method for cholecystectomy further stresses the necessity of correct preoperative diagnosis of complicating disease. (*3*)

In the treatment, cholecystectomy is recommended. But occasionally, the inflammatory reaction and fibrosis within the gallbladder is so severe that conventional cholecystectomy is unsafe. In these instances, a subtotal cholecystectomy is required.

As a consequence, the differential diagnosis should include benign tumors and tumor-like lesions. The preoperative determination of a benign lesion may significantly alter the therapy and prognosis of the patient. Xanthogranulomatous cholecystitis should be considered in the differential diagnosis of a gallbladder tumor.

REFERENCES

1) McCoy JJ Jr, Vila R, Petrossian G, McCall RA, Reddy KS. Xanthogranulomatous cholecystitis. Report of two cases. JSC Med Assoc 1976;72:78-9.
2) Goodman Z, Ishak KG. Xanthogranulomatous cholecystitis. Am J Surg Pathol 1981;5:653-9.
3) Ladefoged C, Lorentzen M. Xanthogranulomatous cholecystitis. A clinicopathological study of 20 cases and review of the literature. APMIS 1993;101:869-75.
4) Balague C, Targarona EM, Sugranes G, Rey MJ, Arce Y, Viella P, et al. Xanthogranulomatous cholecystitis simulating gallbladder neoplasm: therapeutic implications. Gastroenterol Hepatol 1996;19:503-6.
5) Nakashiro H, Haraoka S, Fujiwara K, Harada S, Hisatsugu T, Watanabe T. Xanthogranulomatous cholecystis. Cell composition and a possible pathogenetic role of cell-mediated immunity. Pathol Res Pract 1995;191:1078-86.
6) Nakashiro H. Clinicopathological and immunohistochemical studies of xanthogranulomatous cholecystitis-possible pathogenetic role of cell mediated immunity. Fukuoka Igaku Zasshi 1991;82:48-58.
7) Franco V, Aragona F, Genova G, Florena AM, Stella M, Campesi G. Xanthogranulomatous cholecystitis. Histopathological study and classification. Pathol Res Pract 1990; 186:383-90.
8) Mori M, Watanabe M, Sakuma M, Tsutsumi Y. Infectious etiology of xanthogranulomatous cholecystitis: immunohistochemical identification of bacterial antigens in the xanthogranulomatous lesions. Pathol Int 1999;49:849-52.
9) Parra JA, Acinas O, Bueno J, Guezmes A, Fernandez MA, Farinas MC. Xanthogranulomatous cholecystitis: clinical, sonographic, and CT findings in 26 patients. AJR Am J Roentgenol 2000;174:979-83.
10) Chun KA, Ha HK, Yu ES, Shinn KS, Kim KW, Lee DH, et al. Xanthogranulomatous cholecystitis: CT features with emphasis on differentiation from gallbladder carcinoma. Radiology 1997;203:93-7.
11) Krishnani N, Shukla S, Jain M, Pandey R, Gupta RK. Fine needle aspiration cytology in xanthogranulomatous cholecystitis, gallbladder adenocarcinoma and coexistent lesions. Acta Cytol 2000;44:508-14.
12) Adachi Y, Iso Y, Moriyama M, Kasai T, Hashimoto H. Increased serum CA19-9 in patients with xanthogranulomatous cholecystitis. Hepatogastroenterology 1998;45:77-80.
13) Kumar A, Krishnani N, Saxena R, Kapoor VK, Kaushik SP. Xanthogranulomatous cholecystitis. Indian J Gastroenterol 1996;15:122-5.