Case report

Gallbladder carcinoma with osteoclast-like giant cells

Tomotaka Akatsu¹, Kaori Kameyama², Shigeyuki Kawachi¹, Minoru Tanabe¹, Koichi Aiura¹, Go Wakabayashi¹, Masazuo Ueda¹, Motohide Shimazu¹, and Masaki Kitajima¹

¹Department of Surgery, Keio University School of Medicine, Tokyo, Japan
²Division of Diagnostic Pathology, Keio University School of Medicine, 35 Shinanomachi, Shinjuku-ku, Tokyo 160-8582, Japan

Extraskeletal tumors containing multinucleated, osteoclast-like giant cells (OCGs) are uncommon. These neoplasms are most frequently reported in the breast and pancreas. Recently, some authors have suggested that carcinomas containing OCGs may represent a distinct clinicopathological entity with a more favorable prognosis. Occurrence in the gallbladder is extremely rare, with only one previous case. We report here on an additional case of gallbladder carcinoma with OCGs. A 72-year-old woman presented with postprandial abdominal pain and was found to have a mass in the body of the gallbladder with direct liver invasion. Histological examination showed an adenosquamous carcinoma with an infiltrate of benign OCGs. Immunohistochemical analysis demonstrated that the giant cells were of histiocytic origin. The patient survived for 6 years without evidence of recurrence. This case adds to a small body of literature on gallbladder carcinoma with OCGs. Further studies are required to clearly define the prognostic significance of these giant cells in gallbladder cancer and the differences between adenosquamous carcinoma with OCGs and other gallbladder carcinomas (such as adenocarcinoma and squamous cell carcinoma) with those cells.

Key words: gallbladder cancer, adenosquamous carcinoma, osteoclast-like giant cell

Introduction

Benign multinucleated giant cells have been described infrequently in various organs, such as breast, pancreas, stomach, small intestine, and liver.¹⁻⁶ These giant cells morphologically resemble those found in giant cell tumors of the bone, and they are named osteoclast-like giant cells (OCGs). Recently, some authors have suggested that carcinomas containing OCGs may represent a distinct clinicopathological entity with a more favorable prognosis.¹⁻⁴ However, the clinical importance of this phenomenon remains unclear owing to the rarity of such cases. Occurrence in the gallbladder is extremely rare, and only one case has been described in the literature (based on a search through the PubMed database from January 1979 through August 2005 using the key words gallbladder, cancer, carcinoma, and giant cell).⁷ We report here on an additional case of gallbladder carcinoma with OCGs, and discuss the origin, mechanism, and prognostic significance of these giant cells.

Case report

A 72-year-old woman presented with postprandial upper abdominal pain. She had undergone a Y-graft replacement for an abdominal aortic aneurysm and a graft interposition for aortic arch aneurysm, 2 years and 1 year previously, respectively. An abdominal ultrasonography (US) showed a 3-cm, sessile, hypoechogenic mass of the gallbladder, with a lobulated surface, and with suspected direct invasion of the liver (Fig. 1). Computed tomography (CT) demonstrated a 3-cm, sessile, nodular, hypodense tumor in the gallbladder (Fig. 2a), and irregular thickening of the gallbladder wall. Intraoperative administration of contrast medium showed irregular, mild enhancement of the tumor (Fig. 2b). Dilatation of the biliary tree was not observed. Surgery was performed, based on a preoperative diagnosis of advanced gallbladder carcinoma with direct liver invasion. Surgical exploration revealed a diffusely thickened and hardened gallbladder strongly adhering to the liver. No regional lymph node metastases were found. The patient underwent cholecystectomy and wedge resection...
of the gallbladder bed. The resected specimen showed a 3-cm, sessile mass with a lobulated surface protruding from the body of the gallbladder, which was diffusely thickened owing to chronic inflammation (Fig. 3a). The cut sections of the resected specimen showed that the tumor was widely extended through the gallbladder wall (6 cm maximum width), and had directly invaded the liver parenchyma (Fig. 3b). Macroscopically, the tumor was of nodular type with an infiltrating growth pattern. The margins of resection were free of tumor.

Microscopically, the tumor was composed of malignant epithelial cells with glandular and squamous differentiation. Both components were negative for CD68 (KP-1). Multinucleated giant cells, which morphologically resembled osteoclasts, were uniformly dispersed throughout the tumor (Fig. 4a). These cells had abundant eosinophilic cytoplasm with multiple, peripherally located, small nuclei; no mitotic figures were identified. Immunohistochemically, the OCGs were negative for cytokeratin AE1/AE3, and positive for CD68 (KP-1) (Figs. 4b,c). There was a dense lymphoplasmacytic infiltrate in the stroma. Metastasis to the regional lymph nodes was not observed. Histopathologically, the tumor was diagnosed as gallbladder cancer (Gbfn, T4 (S0, Hinf3, Binf0, PV0, A0), N0, H0, P0, M(-), St(-), stage IVa) according to the Japanese Classification on Cancer of the Biliary Tract.8

**Fig. 1.** Abdominal ultrasonography (US) showing a sessile, hypoechoic mass of the gallbladder, with a lobulated surface and suspected direct liver invasion (arrows)

**Fig. 2.** a Computed tomography (CT) demonstrating a 3-cm, sessile, nodular, hypodense tumor in the gallbladder (arrows). b Intravenous administration of contrast medium showing irregular, mild enhancement of the tumor (arrows)

**Table 1.** Clinicopathological findings of reported cases of gallbladder carcinoma with osteoclast-like giant cells

<table>
<thead>
<tr>
<th>Case</th>
<th>Age (years), sex</th>
<th>Presentation</th>
<th>US</th>
<th>CT</th>
<th>Treatment</th>
<th>Histologic type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>74, F</td>
<td>Weight loss</td>
<td>ND</td>
<td>ND</td>
<td>Cholecystectomy, colectomy, liver biopsy</td>
<td>Adenosquamous carcinoma</td>
</tr>
<tr>
<td>2</td>
<td>72, F</td>
<td>Abdominal pain</td>
<td>Hypoechoic</td>
<td>Hypodense</td>
<td>Cholecystectomy, hepatectomy</td>
<td>Adenosquamous carcinoma</td>
</tr>
</tbody>
</table>

ND, not described; CT, computed tomography; US, ultrasonography; DOD, died of disease; DOAC, died of another cause