Case report

Osteoclast-like giant cell tumour of the gallbladder


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Summary. We describe a rare carcinoma of the gallbladder containing osteoclast-like giant cells. Well-differentiated adenocarcinoma was found in the mucosa of the fundus, and osteoclast-like giant cells were present mainly in a haemorrhagic mass protruding from the mucosal surface. The metastatic hepatic tumour was composed chiefly, if not exclusively, of osteoclastoma-like cells, but minute carcinomatous elements were also present. There was an apparent transition between the giant cells and tubular structures in both the gallbladder tumour and hepatic tumour. However, ultrastructural study did not reveal any evidence of epithelial differentiation in the giant cells. Immunohistochemical studies suggested that the mononuclear and giant cells were mesenchymal and histiocytic in nature (vimentin and factor XIIIa positive). A few exceptional giant cells transforming from the fine tubular structure were positive for epithelial membrane antigen. In conclusion, the osteoclast-like giant cell tumour component was thought to represent mesenchymal metaplasia in pre-existent adenocarcinoma.

Key words: Gallbladder – Osteoclast-like giant cell tumour – Vimentin

Introduction

Tumours histologically similar to giant cell tumours of bone have been reported in the pancreas (Trepeta et al. 1981; Fischer et al. 1988), breast (Holland and Van Haelst 1984; Athanasou et al. 1989), thyroid (Hashimoto et al. 1980), liver (Munoz et al. 1980; Kuwano et al. 1984), parotid gland (Eusebi et al. 1984; Balogh et al. 1985), urinary bladder (Holtz et al. 1972), heart (Dorney 1967), ovary (Prat and Scully 1979), small and large intestine (Eshun-Wilson 1973; Alpers and Beckstead 1985), kidney (Kimura et al. 1983), lung (Love and Daroca 1983), and soft tissue (Salon and Sissons 1972). In most cases the osteoclast-like giant cell component is intermingled with carcinomatous elements, but in some cases the tumour occurred as an apparently pure form of osteoclastoma. To our knowledge, three cases of giant cell tumour of the gallbladder have been described to date in the Armed Forces Institute of Pathology (AFIP) fascicles and Japanese literature (Edmondson 1967; Kimura et al. 1984; Albores-Saavedra and Henson 1986) but the suggested origin of the giant cell differed widely among the authors; opinions were divided between epithelial (Albores-Saavedra et al. 1981) and mesenchymal origin (Kimura et al. 1984). The osteoclast-like giant cell tumour of the gallbladder has never been the subject of a detailed immunohistological study and we have examined such a tumour in order to investigate its immunohistological and ultrastructural features and to attempt to elucidate its origin.

Case report

A 74-year-old Japanese man was admitted to National Nagasaki Central Hospital in February 1990 with a right upper abdominal mass and pain in the right upper quadrant. Ultrasound examination and computed tomography showed multiple gallstones and a 1.3 x 1.0 cm tumour in the bladder fundus indicative of gallbladder cancer. Ultrasound examination coincidentally revealed a 1.0 x 1.5 cm solid mass in the right inferior lobe (S4 section) of the liver, which was later shown to be a haemangioma-like hypervascular tumour by coeliac angiography. Hepatitis B surface antigen was negative, and the serum level of alpha-fetoprotein was not elevated. The patient underwent surgery on 12 March 1990 with a clinical diagnosis of gallstones, gallbladder cancer and hepatic hemangioma. Wedge resection of the right hepatic lobe and cholecystectomy were performed. Negative radiographic findings and the absence of any symptoms of bone tumour ruled out the possibility of liver metastasis of giant cell tumour of the bone.

Pathological findings

The gallbladder contained 20 small gallstones and an organized haematoma-like tumour (Fig. 1) measuring 4 x 4 x 7 cm and locat-
Fig. 1. Gross appearance of the haemorrhagic tumour in the gallbladder. Osteoclast-like giant cells are present in the left marginal portion of the tumour.

Fig. 2. Well-differentiated adenocarcinoma is present mostly in the mucosa of the gallbladder. H&E, ×165

Fig. 3. There are two distinct tumour elements of osteoclast-like giant cells and tubular adenocarcinoma with a transition zone in the mucosa of the gallbladder. H&E, ×110