

Case Report

FNA diagnosis of osteoclast-like giant cell tumor of the pancreas

ABSTRACT

Osteoclast-like giant cell tumor of the pancreas is a rare non-endocrine neoplasm composed of reactive multinucleated giant cells admixed with mononuclear stromal cells. We report a case of osteoclast-like giant cell tumor of the pancreas in a 58-year-old female with vague clinical symptoms. Endoscopic ultrasound-guided aspirate from the mass revealed numerous characteristic osteoclast-like giant cells.

Key words: Fine-needle aspiration cytology; osteoclast-like giant cell tumor; pancreas.

Introduction

Undifferentiated carcinoma of the pancreas with osteoclast-like giant cells (OGCs), first described by Juan Rosai^[1] in 1968, is an exceedingly rare, highly malignant, non-endocrine tumor, which accounts for less than 1% of all pancreatic malignancies. Pure forms of osteoclast-like giant cell tumor (OGCT) have a better prognosis because they have a predilection to local spread, are slower to metastasize and rarely metastasize to lymph nodes, but these forms are very rare.^[2] OGCT of the pancreas consists of two distinct cell populations composed of numerous reactive multinucleated giant cells resembling osteoclasts of the bone and mononuclear stromal cells.^[3] We report one such case of OGCT of the pancreas in an endoscopic ultrasound-guided fine-needle aspirate in a patient with vague clinical symptoms. The above case report is one of the very few published cases of pure OGCT diagnosed in endoscopic ultrasound (EUS)-guided aspirates.^[4] The cytomorphological features are fairly specific and the diagnosis can be achieved by fine-needle aspiration cytology.

Case Report

A 58-year-old female presented with the complaints of dull aching abdominal pain in and around the umbilicus for about 18 months. Pain was not related to food intake and was not radiating to the back. She was a known diabetic and hypertensive. Clinical examination revealed a firm to hard tender mass involving left hypochondrium, epigastrium, umbilical and left lumbar regions. The laboratory investigations including carcinoembryonic antigen and carbohydrate antigen (CA19-9) were within normal limits.

Plain and intravenous contrast-enhanced computed tomography (CT) of the abdomen revealed a heterogeneous cystic pancreatic lesion abutting major regional vascular structures and gastric antrum suggesting the possibility of a pancreatic malignancy. Small lymph nodes were seen in the lesser sac.

Endoscopic ultrasound-guided fine-needle aspiration was done from the cystic pancreatic mass and from the lymph node. Smears aspirated from the pancreatic mass were cellular and showed mononuclear stromal cells along with numerous multinucleated osteoclastic type giant cells having 10 to 20 centrally placed, overlapping nuclei with smooth delicate nuclear membranes, finely granular evenly distributed chromatin and small nucleoli [Figures 1 and 2]. Smears from the lymph node were cellular and showed features of reactive lymphadenitis. Owing to the absence of nuclear atypia, a

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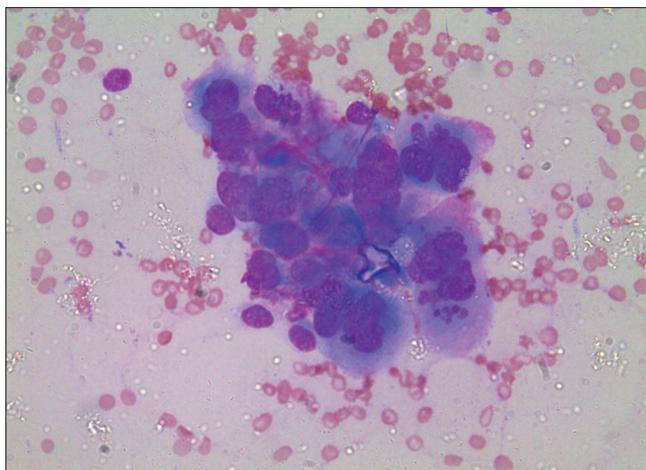


Figure 1: Smears showing numerous multinucleated osteoclastic-type giant cells having 10–20 centrally placed, overlapping nuclei with smooth delicate nuclear membranes, finely granular evenly distributed chromatin and small nucleoli (Giemsa, ×400)

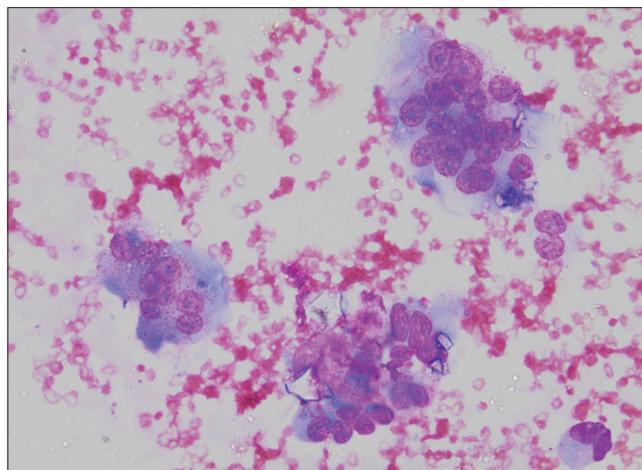


Figure 2: Smears showing numerous multinucleated osteoclastic-type giant cells (Giemsa, ×400)

cytological diagnosis of osteoclastic giant cell tumor of the pancreas was offered. Histopathological confirmation could not be done as the patient was lost for follow-up.

Discussion

Giant cell tumors of the pancreas are considered as a rare variant of adenocarcinoma and are currently classified as undifferentiated carcinoma with osteoclast-like giant cells by the World Health Organization.^[5] Joo *et al.*^[6] reported that the giant cell tumor of pancreas presents as two different phenotypes, undifferentiated carcinoma with OGCs (which is highly malignant and has a poor prognosis) and a pure OGCT (which has a better prognosis). Giant cell tumors have a controversial histogenesis. Some authors favor an epithelial origin from acinar cells or ductal cells and others favor a mesenchymal origin.^[7,8]

OGCTs are neoplasms dominated by benign-appearing OGCs closely resembling conventional giant-cell tumor of the bone.^[1] The formation of OGCs is speculated to result from fusion of bone-marrow-derived mononuclear histiocytes/macrophages attracted to the tumor by chemotactic factors produced by the neoplastic cells.^[9] These cells are consistently positive for leucocyte common antigen and monocyte/macrophage markers like KP1, but shows absent staining for epithelial markers. The infiltrating mononuclear cells lack strong staining for epithelial markers and monocyte/macrophage markers.

OGCTs tends to present at the age of 60 years but there is a wide age range from 32 to 82 years,^[5] and has equal sex distribution. OGCTs usually involve the body and tail of the

pancreas in contrast to pancreatic adenocarcinoma which mainly involves the head. Non-specific upper abdominal pain (likely related to the rapid growth of tumor), abdominal distension and a palpable mass are the prominent initial symptoms in patients with OGCTs, whereas jaundice is the most common presentation in patients with pancreatic adenocarcinoma. They commonly present as large cystic neoplasms with variable areas of hemorrhage and necrosis. Hence, the differential diagnosis of pancreatic OGCT includes cystic lesions like pancreatic serous cystic tumors, mucinous cystic tumors and pancreatic pseudo-cysts.

The treatment protocols and prognosis of these tumors vary. Therefore, a specific diagnosis becomes essential. Pancreatic biopsies are difficult to perform because of the location and associated complications. EUS-guided FNA has revolutionized the diagnostic approach to these cases. The presence of bland OGCs and the mononuclear cells in the absence of bizarre pleomorphic cells is a distinct cytomorphological feature of this rare tumor. Identifying these features on the smears helps in the differentiation of these pure OGCTs from undifferentiated carcinoma with OGCs.

We report this rare case of OGCT with distinct morphology in EUS-guided aspirate smear, as there are very few cases reported in the literature till date and every cytopathologist need to be aware of such entities where a specific diagnosis can be made.

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