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Pancreatic metastasis of extra-skeletal mesenchymal chondrosarcoma diagnosed by ultrasound endoscopy-guided fine-needle aspiration

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Author contributions: design of the study, Chaowu Chen and Haina Chai; collection of the information of the patient, Qian Zhang; administration of treatment, Jun Liu and Chao Sun; and writing and review of the article, Wenli Xu and Jun Liu.

Conflict of interest: the authors declare no conflict of interest.

Keywords: Pancreatic metastasis. Extra-skeletal mesenchymal chondrosarcoma. Ultrasound endoscopy-guided. Fine-needle aspiration.

Dear Editor,

A 47-year-old male with a history of extra-skeletal mesenchymal chondrosarcoma (ESMC) resection of the left chest wall seven years ago was admitted to our hospital due to mid-upper abdominal pain and jaundice for more than ten days. Laboratory tests showed elevated direct bilirubin, alanine aminotransferase, gamma-glutamyltranspeptidase and alkaline phosphatase. Computed tomography (CT) of the abdomen revealed a soft tissue mass in the head and body of the pancreas with irregularly shaped calcifications, and an enhanced scan showed heterogeneous enhancement (Fig. 1A and B). Combined with the patient's past medical history, the

possibility of pancreatic metastasis of ESMC was considered. After anti-inflammatory, hepatoprotective, and cholagogic treatment jaundice improved, and ultrasound endoscopy-guided fine-needle aspiration (EUS-FNA) was performed to clarify the nature of the mass, which showed a 4.1*4.2 cm mixed echogenic area with internal calcification in the head of the pancreas (Fig. 1C and D). Aspiration pathology showed proliferation of short spindle and round cells into nests, and the immunohistochemistry stain showed CD99 (+); CD34, CD117, Dog-1, and S-100 were negative (Fig. 1E and F). Pancreatic metastasis of ESMC was diagnosed. Four months later, endoscopic metal biliary endoprothesis drainage (EMBD) was performed when the patient developed obstructive jaundice again due to lesion progression. Positron emission tomography (PET)/CT at a two-year follow-up showed multiple high-density calcifications and abnormally increased FDG metabolism throughout the body (Fig. 2).

Discussion

Mesenchymal chondrosarcoma (MC) is a rare and aggressive chondrosarcoma. About one-third of cases arise outside the bone and is called ESMC; the most common sites of involvement are the orbit, meninges, and lower limbs, whereas visceral organ involvement is rare (1). Secondary tumors account for 4 % of all pancreatic tumors, and their main sources are lung, gastrointestinal, kidney and hematopoietic system. Pancreatic metastases from chondrosarcoma are particularly rare (2). CXCR4 expression has been found to be higher in chondrosarcoma cells than in normal chondrocytes, while chemokines secreted by lung epithelial cells can enhance the invasiveness of chondrosarcoma cells through the CXCR4/ERK/NFrB pathway. This could be a cause of chondrosarcoma metastasis to the lung (3). However, the pathway of chondrosarcoma metastasis to the pancreas is currently unknown.

In conclusion, we report a rare case of EUS-FNA diagnosis of pancreatic metastasis from ESMC. ESMC has a strong tendency toward local recurrence and distant metastasis, and the pancreas is a potential site of metastasis. In addition, EUS-FNA is an important tool for obtaining metastatic lesions in the pancreas.

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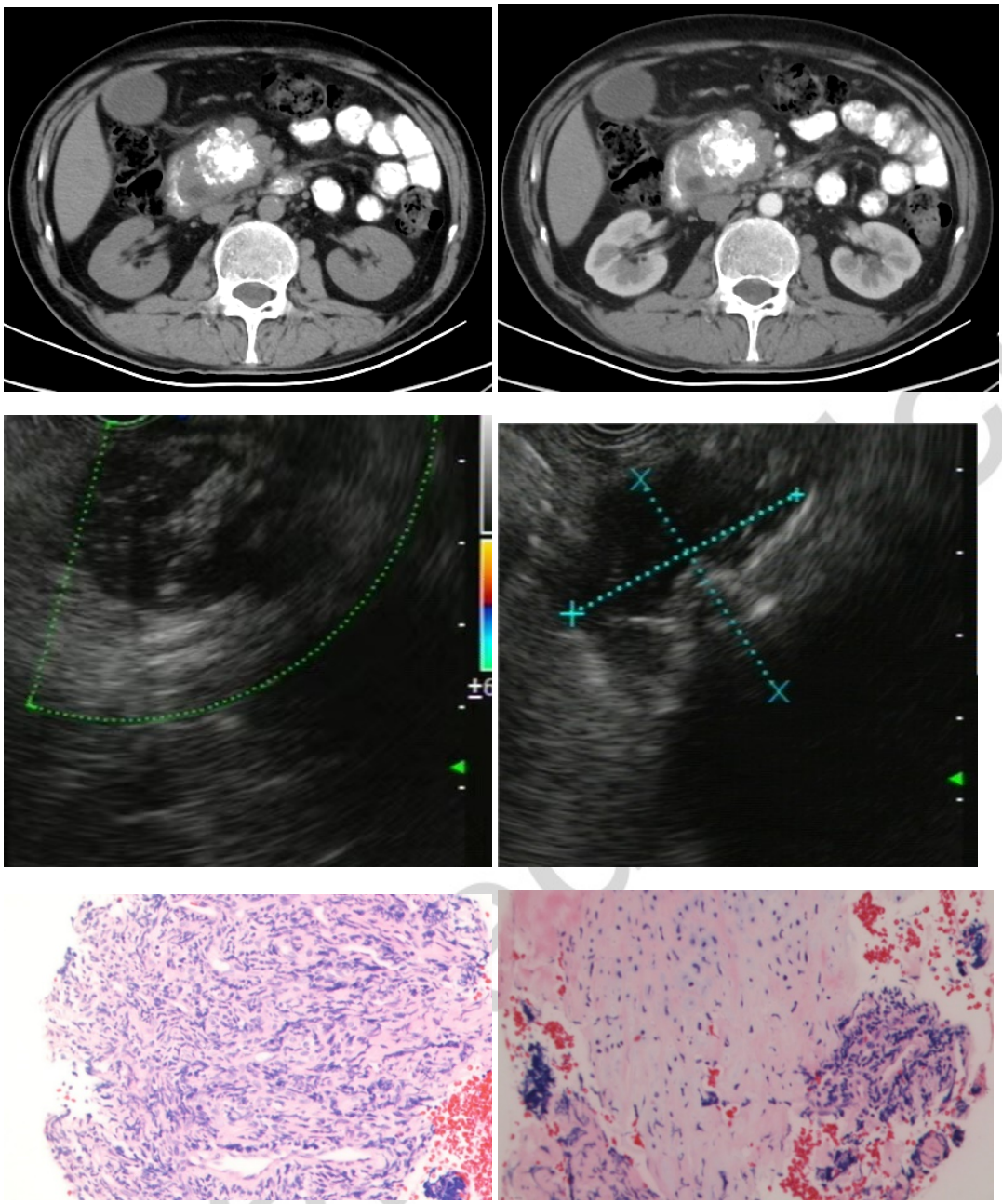

Fig. 1. A. Abdominal computed tomography (CT) showed soft tissue mass in the head and body of the pancreas with irregularly shaped calcifications. B. Enhanced CT showed heterogeneous enhancement of the mass. C and D. Endoscopic ultrasonography revealed a 4.1*4.2 cm mixed echogenic area with internal calcification in the head of the pancreas. E and F. Immunohistochemistry stain of the pancreatic mass. The histological result revealed small blue round and spindle-shaped mesenchymal cells and the islets of highly differentiated cartilage (HE × 200).

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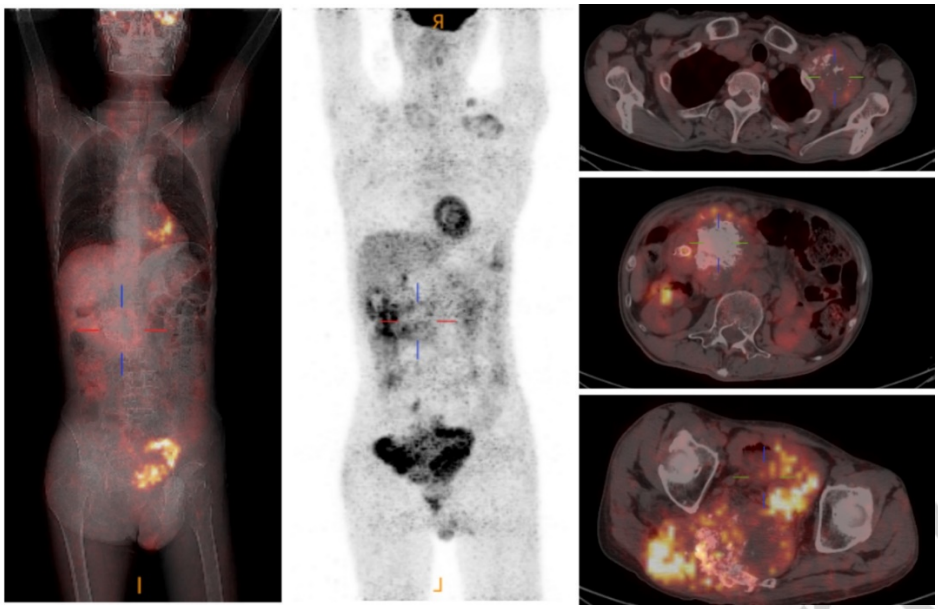

Fig. 2. Positron emission tomography (PET)/CT showed multiple high-density calcifications and abnormally increased FDG metabolism throughout the body.