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Ruptured pancreatic carcinosarcoma – A case of extended survival following surgical resection and chemotherapy

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Dear Editor,

A 56-year-old male patient presented at our medical facility with a history of recurrent, vague abdominal discomfort. The patient reported no previous illnesses or a familial history of tumors. Furthermore, he does not engage in any unhealthy habits, such as smoking or excessive alcohol consumption. Upon admission, the patient exhibited markedly elevated white blood cell count (WBC) and carbohydrate antigen 19-9 (CA19-9) levels. (WBC: $21*10^9$/L, CA19-9: 156. 6U/ml). Magnetic resonance enhancement (MRE) of the abdomen showed a cystic solid lesion in the tail of the pancreas measuring approximately 6. 5 cm * 6. 0 cm * 6. 0 cm. (Fig. 1A). A small quantity of fluid was observed in the vicinity of the liver and spleen (Fig. 1B). A laparoscopic pancreatic body plus splenectomy was performed. The surgeon identified the presence of a ruptured tumor and an old abdominal haematoma. A pathological examination has confirmed the presence of pancreatic carcinosarcoma (Fig. 1C). The surgical margins were negative, and there was no evidence of lymph node metastases. Immunohistochemical results were as follows: CK (partial +), EMA (partial +), vim (+), CK7 (partial +), CK19 (partial +), KI67 40% (+). Reference to chemotherapy regimens for ductal adenocarcinoma of the pancreas. The patient then received seven cycles of gemcitabine plus albumin combined with paclitaxel

intravenous chemotherapy over five months, during which there were only minor gastrointestinal reactions such as nausea and vomiting. At 14 months postoperatively, the patient's abdominal imaging revealed the presence of perigastric and anterior left renal nodules, which were deemed to be metastatic in nature (Fig. 1E, 1F). The patient was followed up for the last time at 20 months postoperatively.

Pancreatic carcinosarcoma is a rare histological subtype of pancreatic cancer, characterised by the presence of both carcinoma and sarcoma components (1). The mechanism of this disease is unclear, and several possible mechanisms have been proposed: the combinatorial theory, which suggests that a combination of epithelial and mesenchymal cells undergoes early differentiation from a common stem cell; the collision theory, which suggests that two independently growing carcinomas and sarcomas collide; and the transformational theory, which suggests that part of a carcinoma transforms into a sarcoma component. And recent research suggests the possibility of a monoclonal origin of the disease coming from a single stem cell. (3-6)
Most patients have non-specific symptoms such as abdominal pain, jaundice, nausea, vomiting and weight loss. Preoperative diagnosis of pancreatic carcinosarcoma is difficult due to its rarity and biphasic nature (1, 7). Given the low incidence and underreporting of pancreatic carcinosarcoma, evidence-based treatment strategies have not been established. Common treatment options are similar to pancreatic cancer, mainly surgery and chemotherapy. Tumor-directed surgery represents an independent postoperative prognostic factor for patients. Additionally, race, tumor staging, and chemotherapy are identified as prognostic factors. Hypofractionation, vascular thrombosis and neurological invasion, as well as distant metastases to other tissues and organs at the time of diagnosis are poor prognostic factors (8). pancreatic carcinosarcoma quasi-mesenchymal-like subtype is more sensitive to gemcitabine (9). The mean postoperative survival time for pancreatic carcinosarcoma, as reported in the literature to date, is six months, with a median survival of nine months (1). Jia et al. reported 31 months survival in one case and Zhu et al. reported postoperative survival up to 20 months in one patient. (7)

Rapid tumor expansion and central necrosis, vascular invasion or injury, and altered vascular composition are all potential factors in tumor rupture. (10, 11) Ruptured cystic tumors of the pancreas are mostly reported. Some pregnancy-related cystic pancreatic tumors have the potential for growth and rupture during pregnancy. (12-14) The cystic component and large size may be an aspect of tumour rupture in this case. The lack of parenchymal tissue encapsulation in exophytic tumours, also increases the risk of rupture. Risk of implant metastasis increased by tumor rupture. According to previous reports on Pancreatic carcinosarcoma, postoperative adjuvant chemotherapy regimens most commonly include gemcitabine, but the final regimen varies. The choice of chemotherapy regimen is more subjective. There is no relevant standard chemotherapy regimen. Therefore, chemotherapy for Pancreatic carcinosarcoma is very difficult. In comparison with previous cases, the overall survival of this patient exceeded the median survival (9 months). The two previous patients with an overall survival of more than 20 months (20 months, 31 months respectively) had lymph node metastases. Similarly, gemcitabine was the chemotherapy drug used in combination with other drugs, including raltitrexed, paclitaxel, adriamycin and cisplatin. The surgical margins were not specified, and this information will be obtained in future cases. (1)

Although our patient had tumor rupture, the postoperative disease-free survival was longer than most patients with pancreatic carcinosarcoma. No invasion of adjacent tissues or organs, no lymph node invasion, no distant metastases, R0 resection of the tumor and postoperative adjuvant chemotherapy with gemcitabine in combination with albumin conjugated paclitaxel resulted in a better prognosis for this patient. Tumor rupture may have facilitated metastasis, but this was delayed by surgery and adjuvant chemotherapy.

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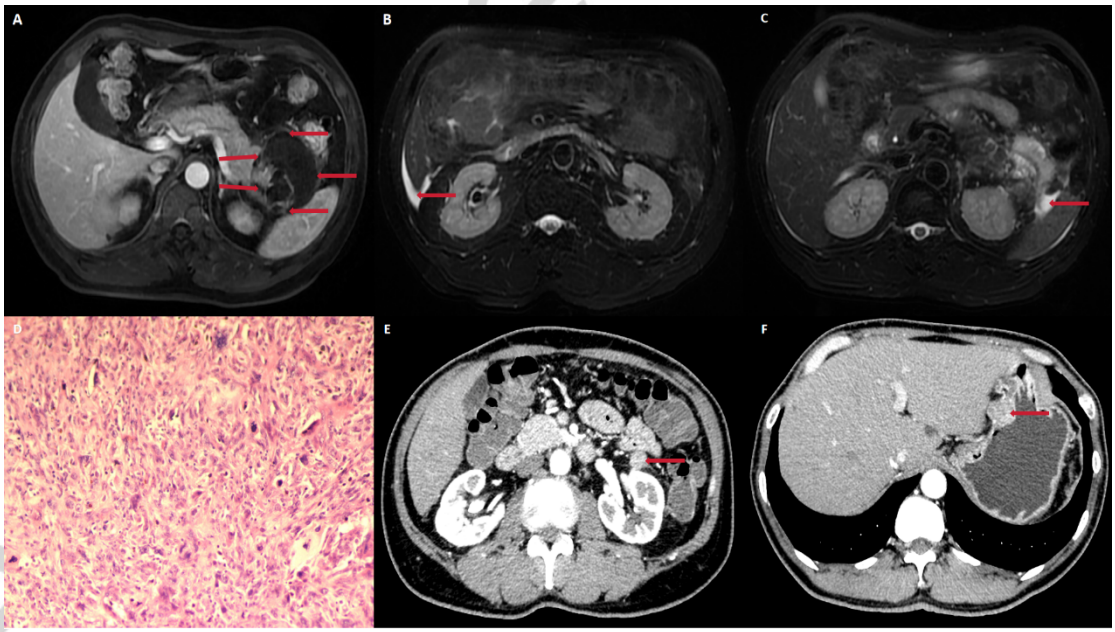

. 1. A Tumour manifestations of abdominal magnetic resonance enhancement (Tumour indicated by arrow), Solid cystic tumor, Significant strengthening of the Solid component. B and C. arrowheads indicate abdominal fluid: High signal on

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magnetic resonance hydrography. D Pathological section (HE 10X). E. arrowheads indicate perigastric tumour metastasis; F. arrowheads indicate anterior left renal tumour metastasis.