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Pancreatectomy as a form of treatment for leiomyosarcoma metastasis to pancreas — case report and literature review

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ABSTRACT

Background: Pancreatic cancers represent about 2% of all malignant tumors. The prognosis for patients is rather poor and the five-year survival is only 9%. Metastases constitute 2–5% of this organ’s tumors, and the management of such cases is determined individually depending on the type of cancer, the patient’s condition and the medical center’s experience. We present a rare case of pancreatic metastasis from a subcutaneous leiomyosarcoma.

Case: A 71-year-old woman with history of leiomyosarcoma — six years ago, two cancer outbreaks, located in the subcutaneous tissue of the thigh and shoulder treated by surgery and adjuvant radiotherapy. After 5 years, a lung metastasis was diagnosed and successfully resected. The following year, CT scan revealed a mass in the pancreas. The patient also complained of epigastric pain and bloating. The biopsy of the lesion confirmed leiomyosarcoma metastasis. The patient underwent 6 cycles of ADIC chemotherapy, after which the tumor size decreased and the laparotomy was performed. The metastasis was well-demarcated and did not infiltrate surrounding tissues, so distal pancreatectomy provided a complete tumor resection. There were no complications throughout surgery. During 12 months follow up no recurrence was observed.

Conclusions: Due to the relatively rare occurrence, standards for the treatment of pancreatic metastases have not been developed yet. This case shows that treatment by resection of the tumor while maintaining a surgical margin can be considered as a form of treatment in pancreatic secondary cancers.

Key words: leiomyosarcoma, pancreatectomy, pancreatic metastasis

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Introduction

Soft tissue sarcomas account for only 1% of solid malignancies [1]. One of the most commonly detected lesions is leiomyosarcoma. For primary leiomyosarcoma, the treatment of choice is tumor resection, which can be combined with adjuvant chemotherapy or radiotherapy. About 40% of these cases metastasise, which is associated with poor prognosis [2]. Secondary lesions, usually disseminated, are treated with systemic chemotherapy. In case of isolated

metastasis, surgical treatment consisting of complete excision of the metastasis gives a chance for recovery.

Malignant neoplasms of the pancreas constitute 2% of all diagnosed cancers [3]. These tumors are usually detected at an advanced stage and are characterized by one of the highest mortality rates, where the five-year survival rate is around 9% [4]. The vast majority of lesions are primary malignancies, and secondary lesions account for 2 to 5% [5]. The most common cancers which metastasise to the pancreas are renal cell carcinoma,

colorectal cancer, melanoma and sarcomas. Due to the rare occurrence of pancreatic secondary tumors, no clear guidelines for therapeutic management have been developed. Metastasectomy is a therapeutic option for patients with single metastasis whose health condition allows pancreatectomy.

Case report

We present the case of a 71-year-old woman, ECOG score 0 — hitherto without severe medical conditions (post-appendectomy, cholecystectomy and resection of the uterus with appendages due to myomas over 20 years ago). The patient was supervised by a gastroenterology clinic and underwent regular prophylactic tests because of a history of abdominal pain, constipation and diarrhoea for several years, and cases of colorectal cancers in the family.

In April she 2014 presented with two subcutaneous well-delimited lesions — the left thigh (diameter 4 cm) and the left arm (diameter 3 cm) without local lymph nodes enlargement. Due to the benign picture of the lesion, a fine needle biopsy was ordered. The biopsy revealed cells specific to malignant mesenchymal tumor. After a coarse needle biopsy, the patient was qualified for tumor resection. Histopathological examination of both lesions showed Leiomyosarcoma, G1, caldesmon (+). Adjuvant radiotherapy at a total dose of 60 Gy was performed in both areas. In the meantime, abdominal and thoracic imaging did not show any abnormalities.

After five years, lesion in the middle lobe of the right lung was found — leiomyosarcoma metastasis was confirmed histopathologically and completely resected.

A year later, CT scan of the abdominal cavity revealed a 24 × 20 mm lesion in the pancreas tail (Fig. 1). The EUS identified the lesion as well delimited and poorly vascularized with dimensions of 27 × 21 mm, the remaining pancreatic parenchyma did not show signs of inflammation, the bile ducts were not dilated. Histopathological examination of the biopsy material confirmed leiomyosarcoma metastasis caldesmon (+), desmin (+), Brg1 (-), CD117 (-). The patient's condition was evaluated as ECOG 1 and qualified for the preoperative course of ADIC chemotherapy and splenopancreatectomy. During the operation, no macroscopic metastatic changes in the abdominal cavity were found, and the tumor itself was considered resectable, spleen preserving distal pancreatectomy was performed. The patient was discharged home without complications on the 5th day after surgery. The histopathological evaluation confirmed the diagnosis and no cancerous infiltration was found in surgical margin (Fig. 2–5). The patient was given postoperative chemotherapy. After over 12 months period of follow-up the state of pancreas is stable.



Figure 1. CT imaging before and after surgery, arrow points tumor in pancreatic tail

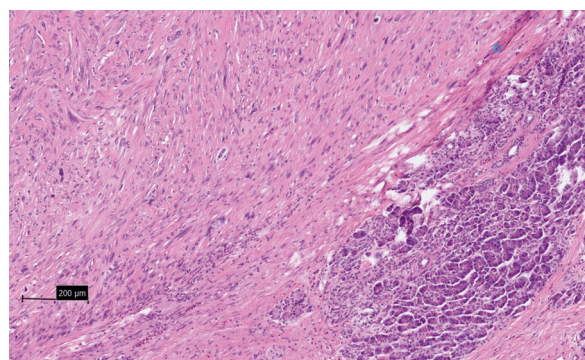


Figure 2. Leiomyosarcoma 10×, on the right pancreatic lobular tissue

Discussion

Soft tissue sarcomas (STS) are rare malignancies which arise from mesoderm. There are more than 50 types of different sarcomas belonging to this group. Leiomyosarcoma is one of the most common

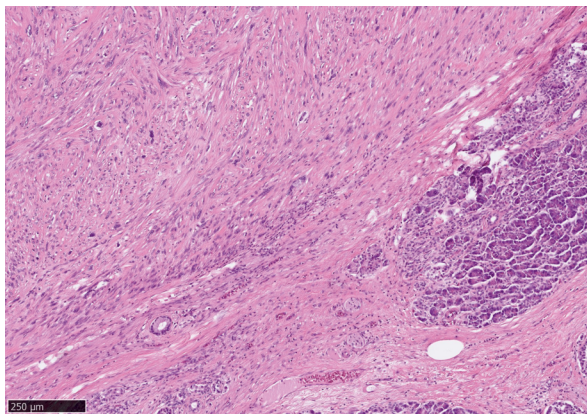


Figure 3. Leiomyosarcoma 10×, on the right pancreatic lobular tissue

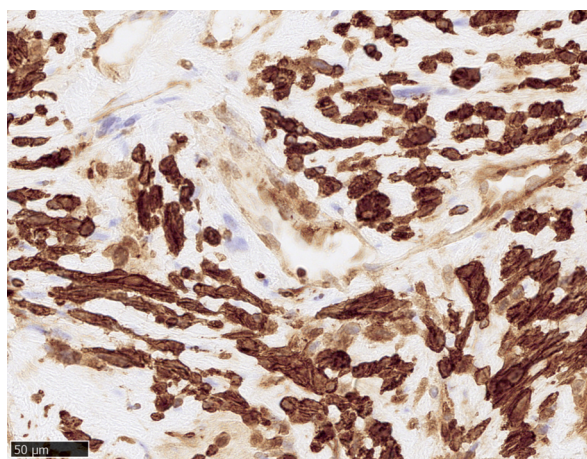


Figure 4. Desmin+, 40×

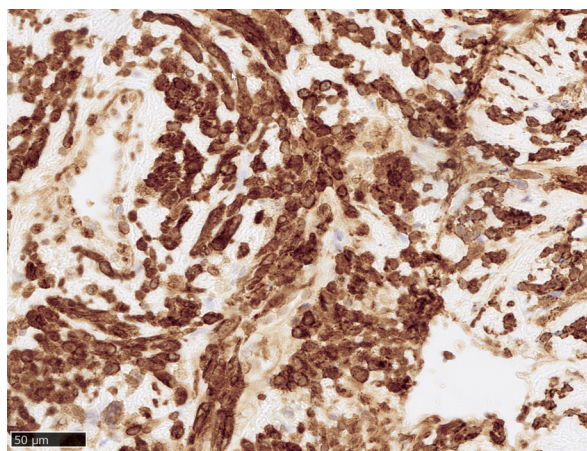


Figure 5. Caldesmon+, 40×

sarcomas which incidence is 10–20% of diagnosed STS [6]. They are usually located in the abdominal cavity, pelvis, less often on the limbs. Resection is the

treatment of choice for primary lesions. In the case of metastases, some patients may benefit from surgery if there is a small number of metastases that appeared late after primary resection. Most secondary lesions are unresectable and they are treated with chemotherapy. Treatment for disseminated metastases is palliative.

Most pancreatic neoplasms are primary where ductal adenocarcinoma accounts for 85% of malignancies [4]. Metastatic tumors are estimated to be 2% [3]. The vast majority of metastases are from renal cell carcinoma (RCC). Other cancers that metastasise to this organ relatively often are colorectal cancer, melanoma, sarcomas [7]. The prognosis for patients with pancreatic leiomyosarcoma metastasis is unknown, although metastatic sarcoma usually indicates poor prognosis, where the average survival time is between 10–30 months [2]. Metastases can occur as a single neoplastic changes or disseminated lesions. However, there are usually multiple lesions when the metastases are detected. RCC often gives solitary metastases [5], which affects the possibility of surgery and gives chances for recovery.

Pancreatic tumors are usually diagnosed accidentally during abdominal imaging. Endosonography seems to be an especially useful tool, because it allows both biopsy and tumor evaluation. Other useful imaging methods are ultrasound, computerised tomography and magnetic resonance imaging. There are no specific symptoms that suggest pancreatic metastases. When a lesion in the pancreas is detected, rapid differential diagnosis is important because of the biology of the most common cancers of the organ.

Resection is the primary treatment for primary pancreatic tumors, but there are no established therapeutic standards for secondary tumors. Several hundred cases of dissemination of various tumors to the pancreas have been reported. It is difficult to assess the effectiveness of surgical treatment due to the lack of studies comparing this method of therapy with chemotherapy. Some publications suggest that resection can be a good therapeutic option for patients without metastases outside the pancreas and should always be considered. Other listed features that are worth considering while qualifying patients for such surgery are primary site control, the patient's condition allowing pancreatectomy and a prognosis for a primary type of cancer [3]. Some cases suggest that pancreatic metastasectomy is associated with improved survival rate, even with complete recovery. If a patient is qualified for secondary pancreatic tumor resection, it is reasonable to refer the patient to a high volume center because of greater experience of the clinics, which translates into better treatment results.

Conclusions

Resection of metastatic pancreatic cancer or sarcoma may be an effective form of treatment in certain cases.

Conflict of interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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