Myxoid liposarcoma with metastasis to the pancreas: a rare case report and review of the literature

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Case report

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Abstract

Background

Metastasis of the pancreas to myxoid liposarcoma is very rare.

Case presentation

We report a 43-year-old woman who underwent radical surgery for myxoid liposarcoma (MLPS) of the sigmoid colon 9 years earlier and for liposarcoma of the neck 7 years earlier. The lesion later metastasized to the pancreas, and we performed pancreaticoduodenectomy, which was pathologically confirmed as myxoid liposarcoma. Unfortunately, the patient died a year later from unexplained gastrointestinal bleeding.

Conclusions

Myxoid liposarcoma is a very rare malignancy that carries a risk of invasion to the pancreas, and complete surgical resection is the best chance for clinical treatment.

Background

Liposarcoma is a malignant tumor originating from mesenchymal stem cells and tending to differentiate into adipose tissue (1). Liposarcoma is one of the most common soft tissue malignancies, accounting for about 15% of soft tissue sarcomas (2). According to the histomorphology of liposarcoma, it can be divided into Atypical tumor (ALT) or well-/dedifferentiated liposarcoma (WDLPS), Dedifferentiated LPS (DDLPS), Myxoid LPS (MLPS) and Pleomorphic LPS (PLS)(3). Myxoid liposarcoma is mainly cystic and contains a large amount of mucus. Its signal density in CT is between water and soft tissue, and contains a small amount of fat density or signal shadow. After enhancement, it is shown as reticular or flocculent mild enhancement. It is mainly composed of mucus and its fat content is about 10–25% (4, 5).

Different from other subtypes, MLPS have a significant migration tendency, mainly to bone and soft tissue, but also to the lungs, liver and abdominal cavity (6–8). However, pancreatic metastases are very rare. Two myxoid liposarcomas with metastasis from extremities to pancreas have been reported in the previous literature (9, 10). However, we report the first case with metastasis from mesentery or neck to pancreas. We performed surgery and reviewed the literature to explore the treatment of this particular type of liposarcoma.

Case Presentation

A 43-year-old woman was admitted to hospital with "right abdominal mass for 3 years". She had no symptoms of intestinal obstruction, jaundice, or fever. Abdominal examination revealed a mass in the middle line of the right clavicle, about 8 cm below the right costal margin, with clear boundary and medium texture. The abdominal wall is soft without tenderness or rebound pain. Nine years ago, the patient underwent "radical resection of the mesangial tumor of sigmoid colon transferred from laparoscopy to laparotomy and appendectomy", and the postoperative pathological results were confirmed as "myxoid liposarcoma of sigmoid colon and chronic appendicitis", without any auxiliary treatment. Seven years ago, the patient underwent "cervical mass resection" for "right neck mass", and the postoperative pathological result was still myxoid liposarcoma. Except for the mild abnormality of alanine aminotransferase, all other laboratory data were normal. Enhanced CT revealed a massive cystic solid mass about 7.3*8.3*10.1 cm in size in front of the pancreatic head, with pancreatic atrophy, pancreatic duct expansion and compression of the pancreatic head. The boundary between the lesion and the compressed pancreatic head was unclear, which was closely related to the pancreatic duct (Fig. 1).

Combined with the patient's medical history, we expected the tumor to be metastatic to liposarcoma of the colon or neck. Intraoperatively, it was found that the tumor was located at the head side of the pancreas in the descending part of the duodenum, protrusion into the enteric cavity and formed a constriction, which was about 10*9*8 cm in size. We performed pancreaticoduodenectomy (resection scope: distal stomach, partial common bile duct, duodenum, head of pancreas, proximal jejunum (about 10 cm) and surrounding tissues), and used Child method to reconstruct digestive tract. The tumor was completely excised with a vegetated cut surface and ulcerated base. During the exploration of the abdominal cavity, a cystic mass with a size of 5*5 cm was observed on the left side of the ovary, and encapsulated effusion was found on the right side. Therefore, the gynecologist was consulted to perform the left cyst stripping and shaping and the right pelvic cavity enveloping effusion removal for the patient. Since no enlarged lymph nodes or disseminated nodes were found, no histological examination or lymph node dissection was performed. All went well

and the patient was discharged 11 days after the operation. Histological examination revealed that the tumor was mainly composed of short spindle cells with myxoid degeneration (Fig. 2). Immunohistochemical results showed that S-100(+),MDM2(-),CD34(-),Desmin(-),CDK4(+),P16(+),EMA(-),SMA(-),Actin(-), and the positive rate of Ki67 was 10% (Fig. 3). Unfortunately, the patient died of "unexplained massive gastrointestinal bleeding" one year after surgery.

Discussion And Conclusions

MLPS accounts for about 30% of all liposarcomas and about 10% of all soft tissue tumors. It often occurs in the deep soft tissues of the limbs, most commonly in the thighs, and rarely in the retroperitoneum and abdomen (2, 11, 12). Although MLPS is more common in people aged 50–65, liposarcoma is the predominant pathological type in children and adolescents (11, 13). Myxoid liposarcoma is the second most common subtype of liposarcoma (14). The risk of local recurrence is very low, even for larger tumors (more than 5 cm), the risk of recurrence within 3 years is 15% in the case of positive margins; A negative marginal status leads to a risk of recurrence of less than 10%. Unfortunately, 10% of myxoid liposarcoma patients go on to develop metastatic disease, in which case the 10-year overall survival rate is about 60% (15). However, the three patients whose tumors had metastasized to the pancreas, as summarized in Table 1, appeared to have low overall survival.

Table 1
Review of the treatment and outcome of pancreatic mucinous liposarcoma

Case No.	Age/ Sex	Primary lesion	Metastatic (time)	Transfer focus location	Size	Treatment	Adjuvant therapy	Outcome	Reference
1	40/F	right thigh	5 years	Pancreatic body	14*9*7 cm ³	Medial pancreatectomy	NA	No recurrence (22 months)	9
2	66/M	Left knee	6 years	Pancreatic head	3 cm	PD	Radiation therapy	No recurrence (6months)	10
3	52/M	Knee	26 months	Pancreatic head	2.5 cm	PPPD	NA	Alvie (12months)	24
4	35/M	Thigh	0 months	Pancreatic tail	11 cm	DP	CTx	Dead (16months)	24
5	43/F	Mesentery or neck	9 or 7 years	Pancreatic head	10*9*8 cm ³	PD	NA	No recurrence (12months)	Present case
CT, Computed tomography; PD, pancreaticoduodenectomy; DP, distal pancreatectomy; M, male; F, female; CTx, adjuvant chemotherapy; PPPD, pylorus-preserving pancreaticoduodenectomy.									

MLPS had a tendency of bone metastasis, about 17%, and lung metastasis rate was 14%. Therapeutically, MLPS is more sensitive to cytotoxic chemotherapy drugs than other types of liposarcoma (16–18). Sarcomas preferentially metastasate through the blood rather than the lymphatic system, and lung and bone tissue are the most common sites of metastatic sarcomas (19). A review of the characteristics of metastatic sarcoma of the pancreas showed no lymph node metastasis in all eight cases of lymph node dissection, suggesting that metastatic sarcoma of the pancreas is more likely to occur through the blood than through the lymphatic system (20). We report and summarize 3 cases of myxoid liposarcoma with pancreatic metastasis. Two cases were metastatic to the pancreas from the extremities, and our case was considered to be metastatic from mesenteric or liposarcoma of the neck.

Since myxoid liposarcomas tend to grow slowly and lack symptoms, most patients do not complain of pain at the tumor site. Most of these tumors are large when they are diagnosed (21). The typical radiographic appearance of myxoid-round cell liposarcomas are to The shoe market myxoid matrix of The tumor which is non-septal in contrast studies (22). It is often difficult to determine the origin of such tumors by preoperative radiological examination. Therefore, the surgical procedure needs to be selected during the operation (18). Surgery is viewed as the mainstay treatment of myxoid liposarcomas. In some instances, surgery is combined with neoadjuvant or

adjuvant radiation and/or chemotherapy (15). The optimal goal of surgery is to successfully remove the tumor with a function-sparing procedure that maintains a wide excision with negative margins. Radiation therapy has been reported to be effective in myxoid liposarcoma of the extremities (18). When sufficient resection margins cannot be ensured, postoperative irradiation can be performed to prevent recurrence (23). The survival status of different types of liposarcoma also seems to be different (24). However, myxomatous liposarcoma has been rarely reported so far, and we will continue to pay attention to the reports of this particular type of malignant tumor in the future. In our case, we suggested adjuvant therapy after surgery, but the patient refused. Also, unfortunately, the patient died a year later from unexplained gastrointestinal bleeding.

In conclusion, we report a rare case and review the literature to find that myxoid liposarcoma is at risk of metastasis to the pancreas in patients who may benefit from radical surgery.

Abbreviations

(MLPS): myxoid liposarcoma; ALT: Atypical tumor; WDLPS: well-/dedifferentiated liposarcoma;DDLPS: Dedifferentiated liposarcoma; PLS: Pleomorphic liposarcoma

Declarations

Ethics approval and consent to participate

The present study was approved by the Ethics Committee of The Affiliated Hospital of Southwest Medical University

Consent for publication

Written informed consent for publication was obtained from the participant.

Availability of data and materials

All data generated or analyzed during this study are included in this published article.

Competing interests

The authors declare that they have no conflict of interests.

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Author Contributions

AW, WF, BS and HC took part in the treatment of this patient. AW, YP, PC and ZH wrote the manuscript and provided the original pictures; AW, BS and HC collected the clinical, radiological and pathologic data; YQ, TH, YC, WF and YP reviewed the manuscript. All authors read and approved the final manuscript.

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Figures

Figure 1

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Figure 2

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Figure 3

Immunohistochemical : a S-100 positive immunostaining in neoplastic cells (200). b P16 positive nuclear immunostaining in neoplastic cells (200).

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