Complete resection of isolated pancreatic metastatic melanoma: A case report and review of the literature

Miao-Xia He, Bin Song, Hui Jiang, Xian-Gui Hu, Yi-Jie Zhang, Jian-Ming Zheng

Miao-Xia He, Hui Jiang, Jian-Ming Zheng, Department of Pathology, Changhai Hospital, Second Military Medical University, Shanghai 200433, China
Bin Song, Xian-Gui Hu, Yi-Jie Zhang, Department of General Surgery, Changhai Hospital, Second Military Medical University, Shanghai 200433, China

Author contributions: He MX, Song B contributed equally to this paper and wrote the paper; He MX diagnosed the case and interpretation of the data; Song B carried the operation and follow-up of the patient; Hu XG and Zhang YJ supervised the operation; Jiang H helped to pathological diagnosis; all authors approved the final manuscript for publication.

Correspondence to: Jian-Ming Zheng, MD, Department of Pathology, Changhai Hospital, Second Military Medical University, Shanghai 200433, China. jinzhang1962@163.com
Telephone: +86-21-81873689 Fax: +86-21-81873689
Received: June 4, 2010 Revised: June 29, 2010
Accepted: July 6, 2010
Published online: September 28, 2010

Abstract
Isolated metastatic melanoma of the pancreas is very rare. Currently, there is very limited experience with surgical resection of pancreatic metastasis. The potential benefit of metastasectomy can improve the quality of life and survival time of patients. We present a case of a 39-year-old Chinese male with a solitary pancreatic tumor which was considered a cystic benign lesion for years. Pathology and immunohistochemistry showed that the tumor in pancreatic tail was a metastasis from a malignant melanoma of the eyeball. No other metastatic foci were found in abdomen. The tumor was completely resected with combined distal pancreatectomy and splenectomy. The patient has survived 25 mo without any signs of local recurrence or other metastatic lesions after operation, indicating that complete surgical resection of a solitary metastatic melanoma of the pancreas can prolong the survival time of patients.

© 2010 Baishideng. All rights reserved.

Key words: Melanoma; Metastasis; Pancreas; Solitary tumor; Resection

Peer reviewer: Dr. Kai Bachmann, Department of Surgery, University Medical Center Hamburg, Martinistraße 52, Hamburg 22529, Germany
He MX, Song B, Jiang H, Hu XG, Zhang YJ, Zheng JM. Complete resection of isolated pancreatic metastatic melanoma: A case report and review of the literature. World J Gastroenterol 2010; 16(36): 4621-4624 Available from: URL: http://www.wjgnet.com/1007-9327/full/v16/i36/4621.htm DOI: http://dx.doi.org/10.3748/wjg.v16.i36.4621

INTRODUCTION
Pancreatic metastasis from a non-pancreatic primary tumor is rare, accounting for approximately 2% of all pancreatic tumors[1,2]. The clinical occurrence of isolated metastasis to the pancreas is even less. There is currently very limited experience with surgical resection of isolated pancreatic metastasis[3]. In fact, pancreatic resection is associated with a high morbidity and mortality, and metastatic disease to the pancreas is considered a terminal-stage condition[4]. However, recent improvement in morbidity and mortality rates of such patients after pancreaticoduodenectomy has made the indication for this operation more acceptable[5]. The potential benefit of metastasectomy for such cases is documented because it can improve their quality of life and survival time[6,7]. Here, we present a rare male Chinese case of an isolated pancreatic metastatic melanoma, which was surgically treated at our hospital. The patient has survived 25 mo without any signs of local recurrence or other metastatic diseases after operation. The related literature was reviewed.

CASE REPORT
A 39-year-old male Chinese patient was admitted to the
Department of General Surgery, Affiliated Changhai Hospital of Second Military Medical University in March 2008 because of a 3-year history of back pain and a cystic tumor in pancreatic tail. He underwent excision of a left eyeball melanoma in a local hospital 5 years ago (2003) with no regional and distant metastases observed. Pathological stage was pT4aN0M0, stage III. The patient did not receive any chemotherapy or radiotherapy after surgery. Subsequently, the patient had back pain in 2006 with a tumor found in pancreatic tail. Computed tomography (CT) showed a cystic tumor in distal pancreas (Figure 1A). The clinical and CT manifestations suggested a benign disease for years. In 2008, because the tumor grew bigger and seemed invasive, the patient was surgically treated at our hospital. Physical examination upon admission in March 2008 revealed the excision of the left eyeball and no local recurrence. Laboratory tests showed normal CEA and CA199 levels, and blood cell count. CT showed a pseudocyst in pancreatic tail with a diameter of 7 cm and poor demarcation from surrounding tissue (Figure 1B). Magnetic resonance imaging (MRI) of the pancreas showed similar results. Endoscopic retrograde pancreatography (ERCP) revealed a deviated main pancreatic duct with no branching in pancreatic tail. Endoscopic examination did not reveal a tumor in any portion of duodenum. In March 2008, a partial pancreatic excision was performed. A tumorous mass measuring 18 cm × 13 cm × 8 cm was found in the pancreatic tail (Figure 2), causing adherence to duodenum and the back of stomach. Frozen section biopsy showed a malignant melanoma which was completely resected with combined distal pancreatectomy and splenectomy, during which no other metastatic foci were found in abdomen.

Histopathology revealed ill-defined epithelioid or polygon tumor cells infiltrating the pancreatic tail (Figure 3A) and dark brown granular intracytoplasmic pigmentation in most parts of the infiltration (Figure 3B). The histopathologic pattern of biopsy specimens was very similar to that of specimens examined postoperatively 5 years ago. Fontana-Masson histochemical staining confirmed a melanin pigment. Immunoreactivity was strongly positive for anti-HMB45 (Figure 3C) and anti-S100 protein (Figure 3D) and weakly positive for anti-melan A. Tumor cells were negative for CAM5.2, EMA, CK8/18, CA199 and CDX2. Ki-67 was over 80%. This malignant melanoma was proven to be a metastasis from the initial lesion of the eyeball. Solitary metastatic melanoma of the pancreas from the eyeball was thus diagnosed.

The patient underwent chemotherapy after surgery and was followed up for 2 years. He has survived 25 mo without any signs of local recurrence or other metastatic lesions after operation.

DISCUSSION

Only 5% of malignant melanomas have been found in the eye, and most ocular melanomas commonly metastasize to the viscera[8]. Ocular melanoma rarely metastasizes to lymph nodes due to lack of lymphatic vessels in the uveal tract[9,10]. Pancreatic metastases occur in less than 2% of patients with visceral melanoma metastases, but most pancreatic metastases disproportionately originate from primary ocular melanoma[9,10]. To date, few cases of pancreatic metastatic melanoma from ocular melanoma have been reported[9-14]. We present an unusual case of solitary pancreatic metastatic melanoma after a latency period of 5 years from melanoma of the eyeball. The patient had a 3-year history of back pain and a cystic mass in pancreatic tail. CT showed a pseudocyst in pancreatic tail with a diameter of 4-7 cm. The clinical and CT manifestations suggested a benign disease for years. Eventually, because the tumor grew bigger and seemed invasive, the patient was surgically treated at our hospital. The distal pancreas and spleen were carefully resected with no other metastatic foci observed in abdomen. Histopathology and immu-
No histology showed that the tumor was a melanoma, which was considered a metastasis from the initial lesion of eyeball, and chemotherapy was arranged. The patient has survived 25 mo without any signs of local recurrence or other metastatic lesions after operation.

Few reports are available on secondary pancreatic malignancies from a malignant melanoma, and most of them did not explain the features of the tumors. The clinical manifestations of most pancreatic metastases include disturbance of exocrine and/or endocrine function, various gastrointestinal problems, progressive back pain, with or without obstructive jaundice, and pancreatitis [8,9,11-13]. However, in some individuals, pancreatic metastasis is completely asymptomatic [9]. It has been reported that patients with previously diagnosed eye or occult melanoma presenting as a pancreatic metastasis have upper quadrant abdominal pain, nausea, back pain or are asymptomatic [10,14]. In our patient, the melanoma metastasized to the pancreatic tail to form a solitary lesion, and the tumor in pancreatic tail extended to the wall of duodenum and the back of stomach. However, the patient recently experienced back pain. CT showed that the tumor was a cystic lesion as a benign cystic disease for years. ERCP revealed a deviated main pancreatic duct with no branching in pancreatic tail but no obstructive jaundice in the patient. Such invasiveness and CT performance are unique [10,14]. Cystic pancreatic masses seen on imaging and a prolonged history of upper abdominal pain or back pain are clinically suggestive of benign diseases such as inflammatory pseudocyst, true cyst or cystadenoma. The patient was diagnosed as a benign pancreatic cystic lesion. Eventually, because the tumor grew bigger and seemed invasive, he was surgically treated. In fact, the exact preoperative diagnosis of the tumor could not be established, primarily due to the tumor location in the distal pancreas where biopsy remains difficult. The most reliable method for verifying the diagnosis remains histological biopsy of the pancreas. In this case, intraoperative frozen biopsy is necessary and helpful.

It has been reported that the 5-year survival rate of patients with metastatic disease from cutaneous melanoma and those with distant metastasis of ocular melanoma is 18% and 39%, respectively after complete resection [15], while their survival rate is 0% when they are managed non-operatively [16]. It has been shown that median survival time of patients with pancreatic metastatic melanoma after complete and incomplete resection is 24 and 8 mo with a 5-year survival rate of 37% and 0%, respectively [16,17], indicating that complete resection can improve the survival rate of such patients. We think that, if resection is not too dangerous to perform, as in the present case, it is prudent to adopt a less aggressive approach [2,12-14,16].

The prognosis of patients with pancreatic metastatic malignant melanoma is variable and unpredictable. The interval time from the diagnosis of a primary tumor to pancreatic metastasis is 2-28 years [17,18]. It was reported that the disease-free interval time is not related the survival time [19,20], and that a prolonged interval time free of malignant melanoma does not imply a better prognosis once
metastasis occurs\textsuperscript{12,13}. Our patient with a solitary pancreatic metastatic melanoma after a latency period of 5 years from melanoma of the eyeball has survived 25 mo without any signs of local recurrence or other metastatic diseases after complete resection of the tumor. It is unclear whether the presence of solitary or multifocal lesions is a determinant for the survival time of patients with pancreatic metastatic malignant melanoma. The prognosis of patients reported in the literature is different\textsuperscript{12-14,22,23}. The aim of this report is to add a new case of isolated pancreatic metastatic melanoma in a Chinese male, which was successfully treated with surgical operation, indicating that complete resection of a solitary pancreatic metastatic melanoma can prolong the survival time of such patients\textsuperscript{23}.

REFERENCES

1 Nakamura E, Shimizu M, Itoh T, Manabe T. Secondary tumors of the pancreas: clinicopathological study of 103 autopsy cases of Japanese patients. Pathol Int 2001; 51: 686-690
2 Eit S, Jergas M, Schmidt R, Siedek M. Metastasis to the pancreas—an indication for pancreatic resection? Langenbecks Arch Surg 2007; 392: 539-542
3 Robbins EG 2nd, Franceschi D, Barkin JS. Solitary metastatic tumors to the pancreas: a case report and review of the literature. Am J Gastroenterol 1996; 91: 2414-2417
4 Verbeke CS, Smith AM. Survival after pancreaticoduodenectomy is not improved by extending resections to achieve negative margins. Ann Surg 2010; 251: 776-777; author reply 777-778
5 Chua TC, Saxena A. Pancreatic cancer margin status after pancreaticoduodenectomy-the way forward. Ann Surg 2010; 251: 775-776; author reply 777-778
6 Reddy S, Edil BH, Cameron JL, Pawlik TM, Herman JM, Gibson MM, Campbell KA, Schulick RD, Ahuja N, Wolfgang CL. Pancreatic resection of isolated metastases from nonpancreatic primary cancers. Ann Surg Oncol 2008; 15: 3199-3206
7 Sweeney AD, Wu MF, Hilsenbeck SG, Brunicardi FC, Fisher WE. Value of pancreatic resection for cancer metastatic to the pancreas. J Surg Res 2009; 156: 189-198
8 Salmon RJ, Levy C, Plancher C, Dorval T, Desjardins L, Leyvrer S, Pouillart P, Schlienger P, Servois V, Asselain B. Treatment of liver metastases from uveal melanoma by combined surgery-chemotherapy. Eur J Surg Oncol 1998; 24: 127-130
9 Hsu EC, Essner R, Foshag LJ, Ye X, Wang HJ, Morton DL. Prolonged survival after complete resection of metastases from intraocular melanoma. Cancer 2004; 100: 122-129
10 Brodish RJ, McFadden DW. The pancreas as the solitary site of metastasis from melanoma. Pancreas 1993; 8: 276-278
11 Lopez-Cantarero Ballesteros M, Fuentes Porcel O, Perez Cabrera B, Perez Benítez F, Bustos de Abajo M, Jean B. [Malignant melanoma to the pancreas] Rev Esp Enferm Dig 1992; 82: 61-62
12 Bianca A, Carboni N, Di Carlo V, Falleni M, Ferrero S, Livrani C, Staudacher C, Turra G, Vergani D, Zerbi A. Pancreatic malignant melanoma with occult primary lesion. A case report. Pathologica 1992; 84: 531-537
13 Nikfarjam M, Evans P, Christophi C. Pancreatic resection for metastatic melanoma. HPB (Oxford) 2003; 5: 174-179
14 Mourra N, Arrie L, Balladur P, Flejou JF, Trel E, Paye F. Isolated metastatic tumors to the pancreas: Hôpital St-Antoine experience. Pancreas 2010; 39: 577-580
15 Pawlik TM, Zorzzi D, Abdalla EC, Clary BM, Gershwenwald JE, Ross MI, Aloia TA, Curley SA, Camacho LH, Capussotti L, Elias D, Vauthey JN. Hepatic resection for metastatic melanoma: distinct patterns of recurrence and prognosis for ocular versus cutaneous disease. Ann Surg Oncol 2006; 13: 712-720
16 Wood TF, DiFronzo LA, Rose DM, Haigh PJ, Stern SL, Wanek L, Essner R, Morton DL. Does complete resection of melanoma metastatic to solid intra-abdominal organs improve survival? Ann Surg Oncol 2001; 8: 658-662
17 Vagefi PA, Stangenberg L, Krings G, Forcione DG, Wargo JA. Ocular melanoma metastatic to the pancreas after a 28-year disease-free interval. Surgery 2010; 148: 151-154
18 Slattery E, O’Donoghue D. Metastatic Melanoma Presenting 24 years after surgical resection: a case report and review of the literature. Cases J 2009; 2: 189
19 Masetti M, Zanini N, Martuzzi F, Fabbi C, Mastrangelo L, Landolfo G, Formelli A, Burzi M, Vezzelli E, Jovine E. Analysis of prognostic factors in metastatic tumors of the pancreas: a single-center experience and review of the literature. Pancreas 2010; 39: 135-143
20 Crowley NJ, Seigler HF. Late recurrence of malignant melanoma. Analysis of 168 patients. Ann Surg 1990; 212: 173-177
21 Mizushima T, Tanioka H, Emori Y, Ochi K, Yoshida A, Kiura K, Tanimoto M. Metastatic pancreatic malignant melanoma: tumor thrombus formed in portal venous system 15 years after initial surgery. Pancreas 2003; 27: 201-203
22 Chodorowski Z, Se Anand J, Jassem J, Kopacz A, Kruszewski W, Emerich J, Senkus-Konek E. Late recurrence of malignant tumours 20 years after diagnosis and treatment. Przegl Lek 2007; 64: 372-373
23 Shokrollahi K. Determining the prognosis of melanoma. Ann Plast Surg 2010; 64: 135

S-Editor Wang YR  L-Editor Wang XL  E-Editor Ma WH