Prolonged Survival after the Surgical Management of a Solitary Malignant Melanoma Lesion within the Pancreas: a Case Report of Curative Resection

Sophocles Lanitis[1,2], Nikos Papaioannou[2], George Sgourakis[2], Adrienne Seitz[3], Emmanouil Zacharakis[3], Constantine Karaliotas[2]

1) General Surgery Unit, Imperial College Healthcare NHS Trust, St Mary's Hospital, Mary Stanford Wing, London, United Kingdom; 2) 2nd Surgical Department and Unit of Surgical Oncology, "Korgialenio-Benakio National Red Cross" Athens General Hospital, Athens, Greece 3) Department of Hepatobiliary and Pancreatic Surgery, Imperial College NHS Healthcare Trust, Hammersmith Hospital, London, United Kingdom

Abstract

Solitary involvement of the pancreas in patients with malignant melanoma is rare and the role of surgery in these patients is not defined. We present a patient with prolonged survival following aggressive surgical management for a solitary metastatic lesion within the pancreas. A 69-year-old male presented with a 10-day history of painless jaundice. His past medical history included a wide local excision for a superficial spreading melanoma, and subsequent loco-regional recurrence requiring lymph node dissection. Imaging on presentation showed a solitary mass in the head of the pancreas, with no signs of metastases. The patient underwent a pancreato-duodenectomy. Histology reported a metastatic malignant melanoma with clear excision margins. There was no nodal involvement and he remained disease-free eight years later. The survival of patients seems to be affected by the ability to perform a curative resection, and by a long disease–free interval between the treatment of the initial lesion and disease recurrence. Curative surgical resection should be offered to selected patients with a solitary pancreatic malignant melanoma metastasis. Such aggressive management may lead to prolonged, and disease-free survival.

Key words

Metastatic melanoma – metastasectomy – melanoma of the pancreas – pancreatic metastases.

Introduction

Malignant melanoma (MM) is responsible for a significant proportion of deaths from skin cancer. The incidence, as with other skin malignancies, is increasing worldwide [1]. The recurrence rate after treatment of the primary lesion is approximately 30%, and the disease can occur in almost any organ of the body [2]. The most common site of metastasis is the regional lymph nodes, while distant metastases, elsewhere in the body, are less common [2]. The risks for nodal involvement and of distant metastases increase along with depth of the primary lesion [1, 2].

Metastatic MM has a poor prognosis. The 5-year survival is less than 10%, with a median survival of up to 9 months [1]. Only 10-25% of metastatic MM patients are candidates for curative resection of the secondary deposits [1].

Spread to a solitary organ, specifically to the pancreas, is extremely rare (<1%) [3], with less than two hundred cases reported in the literature [4]. Traditionally, metastatic pancreatic disease had been considered a terminal condition. This was due to the low resectability rate, the presence of widespread disease, and the increased morbidity associated with the operation [3-5]. However, with the evolution of the imaging techniques, combined with the improving surgical expertise, the safety and effectiveness of these procedures have been demonstrated, and there has been an increase in survival following surgery [4, 5]. Within the limited literature discussing metastatic involvement of the pancreas, it has been noted that there is commonly a long disease free interval (DFI) between the diagnosis of the primary lesion, and the appearance of metastatic deposits within the pancreas [1, 4, 6]. This seems to be the only factor associated with improved survival [3, 6]. We present a case of metastatic MM with a solitary lesion in the pancreas. In this case, there has been a prolonged survival of eight years following aggressive surgical management. We also present a brief review of the current literature.

Case presentation

A 69-year-old male patient presented with a 10-day history of painless jaundice. There were no other associated symptoms. His past medical history included hypertension, which was well controlled with medications, and a history

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Address for correspondence: Emmanouil Zacharakis, MD, PhD, Consultant General Surgeon
Department of Hepatobiliary and Pancreatic Surgery
Hammersmith Hospital,
London, UK
Email: e.zacharakis@imperial.ac.uk

of superficial MM. Five years previously, he underwent a wide local excision of the right leg. Histopathology showed a Breslow depth of 0.90 mm, Clark's level III. Two years after the initial operation, there was recurrence in the regional inguinal lymph nodes, which were dissected. The initial and subsequent staging computerized tomography (CT) scans did not show any sign of distant metastases. Following the lymph node clearance, the patient remained asymptomatic until this presentation.

On examination, the patient was visibly jaundiced. The carcino-embryonic antigen (CEA), and carbohydrate antigen 19.9 (CA 19.9) levels were not elevated. A repeat abdominal CT scan showed a mass in the head of the pancreas, with associated intra and extrahepatic biliary tract dilatation (Fig. 1). Further imaging did not reveal disease elsewhere. The decision was made to operate as there was no evidence of widespread disease, and because the mass did not involve any major blood vessels, or important anatomical structures.

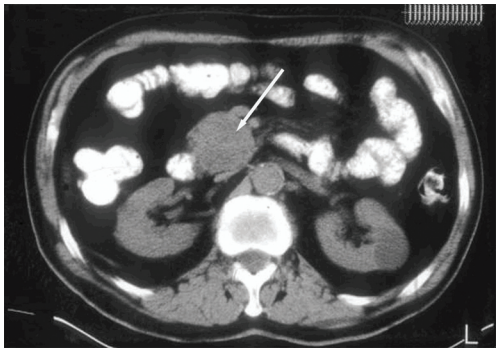

Fig 1. Preoperative CT scan of the abdomen showing a mass in the head of the pancreas.

The patient underwent laparotomy and pancreato-duodenectomy (Whipple's procedure). Macroscopically, there was a 4.5cm pale tumour which was pressing, but not invading the common bile duct (Fig. 2A). The duodenum was unaffected, and the operating margins were free of tumour. Microscopically, the histology showed malignant squamous amelanocytic tumour cells with clear resection margins. The immunohistochemisty showed that the cells were positive for protein S-100, Vimentin, and negative for MCK and Human Melanoma Black (HMB)–45. The morphology of the tumour was compatible with metastatic melanoma. An enlarged lymph node, which had also been excised and sent for histology, was free of malignancy. The patient had an uncomplicated and complete recovery.

During the follow-up, 30 months later, the patient developed an enlarging mole in his right knee. It had an irregular border, and he underwent an excisional biopsy. The histology confirmed the lesion to be an in-transit metastatic epithelial type malignant melanoma, therefore the patient received a further wide local excision. Further imaging of the chest, abdomen and pelvis, as well as a detailed clinical examination did not show any other signs of the disease.

This patient has since been under regular clinical and radiological surveillance. Eight years after the pancreatoduodenectomy, he remains free of loco-regional or distant disease.

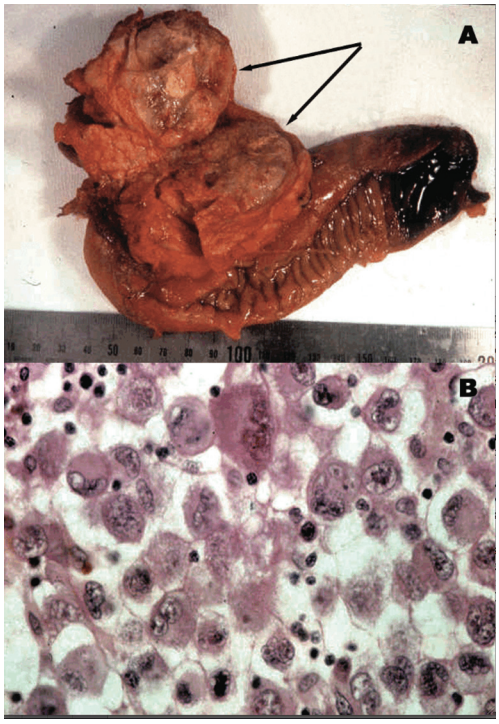

Fig 2. A. Surgical specimen: 4.5 cm pale tumour in the head of the pancreas pressing but not invading the common bile duct. The duodenum is unaffected. Macroscopically, the resection margins are free from disease. B. Histological aspect: malignant squamous amelanocytic tumour with clear resection margins (H&E x 200).

Written informed consent was obtained from the patient for publication of this case report and accompanying images.

Discussion

Metastatic MM has an unfavourable prognosis. The five-year survival of patients with a solitary metastasis is 12% (median 11 months), whilst the 5-year survival with multiple metastases is 0% (median survival 4 months). Following a complete resection of the solitary metastasis, the 5-year survival increases significantly to 18%, with a median survival of 15 months [7]. Survival is dependent on the site of distant metastases; patients with visceral involvement have less favorable outcomes than those with soft tissue or distant nodal recurrence [2].

Melanoma of the pancreas was first described in 1931. Although pancreatic metastases are frequently present in patients with diffuse disease, solitary involvement is rare, and is more disproportionately described with a primary ocular melanoma [3]. Isolated pancreatic metastases have been commonly reported with renal cell carcinoma, and other primary sites include colon, lung, breast, and less commonly, skin [3].

Most authors recommend surgery as the treatment of choice for pancreatic metastases that are amenable to resection, as it seems to be the only treatment able to prolong survival [1]. There also seems to be a higher resectability index associated with pancreatic metastases compared with adenocarcinoma of the pancreas. This is because the borders of metastatic lesions tend to be better defined [3-7]. For non - resectable lesions, surgery still offers good palliation and improvement of quality of life, and it is associated with minimal morbidity [1, 5]. The role of surgery, however, in the case of MM of the pancreas, is less clearly defined, as there is very little literature available that compares the survival advantage. In one series, the 5-year survival of patients with multiple metastases was improved from 23% to 37.5% with operative treatment in selected patients [8]. The median DFI in these patients was 24 months [8]. In another series that involved 4 patients with MM, 2 patients had died by follow up at 25 months, and 2 had survived at 30 and 76 months [4]. It was noted that the surviving patients had a longer DFI at 4 and 14 years, respectively [4]. Other studies, however, do not show a significant survival improvement following surgery [5, 6].

It seems that the survival of patients with pancreatic MM is dependent on two main factors: the ability to completely resect the metastatic deposits, rendering the patient free from disease, and the length of the DFI [3]. The DFI is defined as the time measured from the treatment of the primary lesion, to the onset of metastatic disease. It is thought that an increased DFI is a result of a more favourable tumour biology, where the tumour cells are less aggressive, slow to divide, and are less likely to metastasise [3]. Unfortunately, there is currently no effective non-surgical treatment for MM of the pancreas, and the role of adjuvant chemotherapy and immunotherapy is still being examined [3].

Conclusion

Our patient has survived, and remains disease free eight years following aggressive surgical management for a single metastasis in the head of the pancreas. We believe that in a patient with favorable tumour characteristics, which can be discerned by the length of the DFI, the complete resection of a solitary metastic lesion in the pancreas should be considered as a viable option for the future.

Authors' contributions

NP and GS collected the data and reviewed the patient`s notes, histology and imaging. They also assisted with the writing of the paper. CK was the leading clinician for the management of the patient. SL and AS designed, wrote and edited the manuscript to its final form with the assistance of EZ.

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