Dermatomal eruption as the first clinical manifestation of recurrent metastatic pancreatic cancer

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INTRODUCTION

Pancreatic cancer often has a poor prognosis, and early detection is paramount in increasing survival rates.[1] Although known to metastasize rapidly, pancreatic cancer rarely metastasizes to the skin.[1] Cutaneous metastases predominantly involve the umbilical area.[1] Involvement of nonumbilical areas is exceedingly rare.[2] To our knowledge, no other cases involving dermatomal or zosteriform cutaneous metastasis of pancreatic adenocarcinoma have been reported in literature. We present a rare case of unilateral, dermatomal, nonumbilical cutaneous metastasis as the initial manifestation of recurrent pancreatic cancer.

CASE REPORT

A 71-year-old African American man presented with a month-long history of a painful rash on the left side of the upper portion of the torso. He had been treated by his primary care physician with gabapentin, oral prednisone, and 2 courses of valacyclovir for presumed varicella zoster infection; however, the sharp knife-like pain and rash persisted. He denied having fluid-filled blisters at any point throughout the course and endorsed a childhood history of chicken pox. Other notable history included a pancreatic adenocarcinoma of the ampulla of Vater treated with the Whipple procedure 4 years previously. At the time of presentation, he was in remission and not immunosuppressed. Physical examination revealed firm, violaceous nodules on a background of violaceous indurated plaques on the left side of the upper portion of the torso and medial volar aspect of the left wrist with dermatomal distribution along the T1, T3, and T4 dermatomes (Fig 1, *A* and *B*, respectively). A punch biopsy of the left side of the upper portion of the torso plaque showed moderately differentiated adenocarcinoma (Fig 1, *C*). Immunohistochemistry stains revealed that the tumor cells were positive for CK7 and pancytokeratin and negative for CDX-2, CK20, and GATA-3 (Fig 1, *D*). These findings raised the possibility of metastatic carcinoma from pancreatobiliary origin. Polymerase chain reaction analysis of the skin lesion was negative for varicella zoster virus. A computed tomography scan of the chest revealed extensive left axillary lymphadenopathy extending into the supraclavicular region, with the largest node measuring up to 2.8 cm, as well as enlarged perihepatic and right costophrenic angle lymph nodes. Computed tomography of the abdomen and pelvis with intravenous contrast showed interval increase in the size of a heterogeneous soft tissue mass associated with the left adrenal gland, as well as interval worsening of pancreatic ductal dilation. A duodenal biopsy was performed and confirmed adenocarcinoma. Immunohistochemical studies showed that the tumor cells stained negative for CDX2, and positive for CK7, CEA, and CA19-9. On additional workup, serum CA 125 (591.4 U/mL), CA 19-9 (12,189.0 U/mL), CEA (233.3 ng/mL), and C-reactive protein (141.6 mg/L) were all elevated. The patient's clinical, laboratory, and imaging findings were most consistent with metastatic carcinoma of pancreatic origin.

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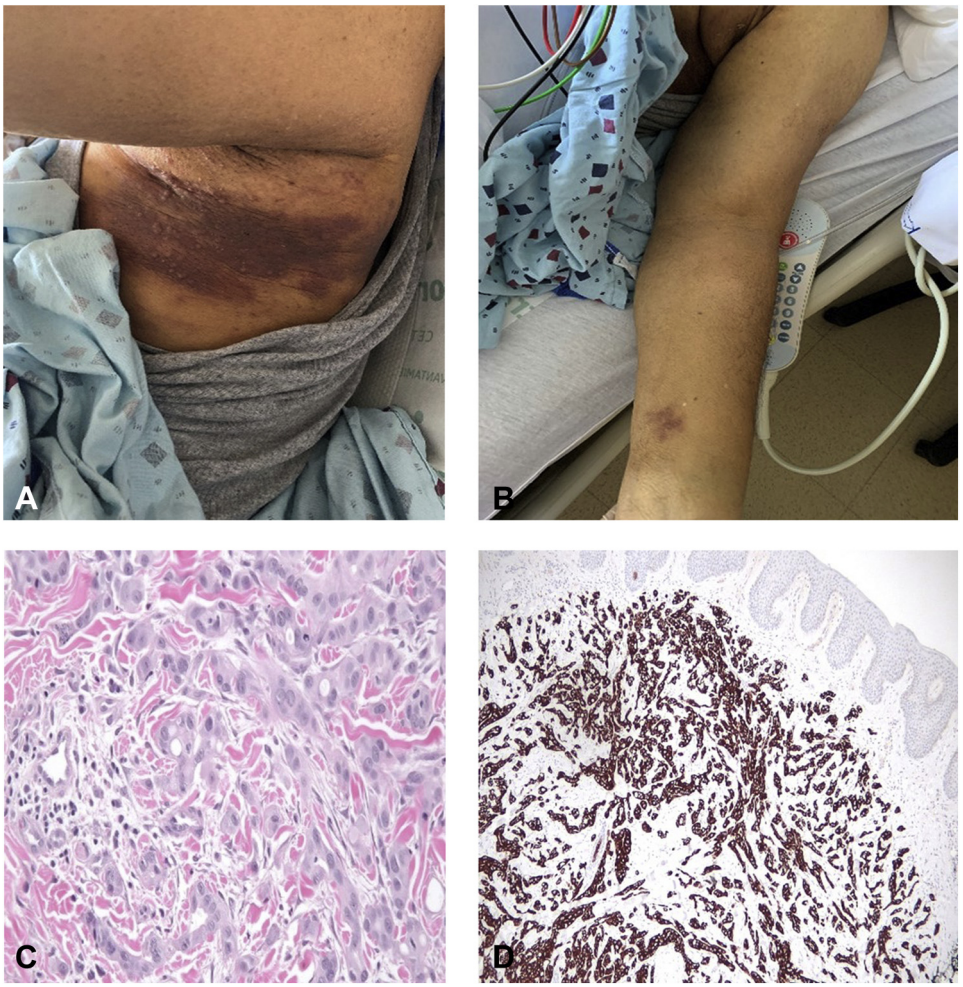

Fig 1. **A**, Firm, violaceous nodules on a background of violaceous indurated plaque presenting in a dermatomal pattern on the left side of the upper portion of the torso. **B**, Firm, violaceous nodules on a background of violaceous indurated plaque presenting in a dermatomal pattern on the medial volar aspect of the left wrist. **C**, Photomicrograph showing infiltrate of atypical glands. **D**, Tumor cells stained positive by CK7 staining. (**C**, Hematoxylin-eosin stain; **D**, CK7 stain; original magnifications: **C**, ×200; **D**, ×40.)

DISCUSSION

The overall 5-year survival rate of pancreatic cancer is 5.5%.[1] Typically, patients do not experience any symptoms until the cancer has advanced.[1] The most common sites of pancreatic cancer metastases are the lymph nodes, liver, lung, and adrenal glands.[1] Cutaneous metastasis from the pancreas is an unusual finding, and when it occurs, it usually involves the periumbilical area.[2] Although previous nonumbilical cutaneous lesions have been reported,[1-3] they are a rare occurrence. Miyahara et al[4] reported that 16 of the 22 cases of cutaneous metastasis from pancreatic carcinoma were present in the umbilicus. Lookingbill et al[5] observed cutaneous metastasis in 0.50% of their autopsies of pancreatic cancer patients (2 out of 420). In some instances, such as in our case, cutaneous lesions may be the initial clinical manifestation of metastatic pancreatic cancer. Miyahara et al[4] reviewed 20 cases of cutaneous metastasis from pancreatic cancer.[2] Out of 20 cases where cutaneous metastases were present prior to the diagnosis of pancreatic cancer, cutaneous lesions were the first symptom in 11 cases.[2,4,6] Although the exact mechanism of skin metastasis is unknown, pancreatic cancer cells may travel via the lymphatics from the peritoneal cavity to the umbilicus and via the blood and lymphatic system to distant nonumbilical skin.[1,7] Savoia et al[8] reported that only 56 cases of zosteriform cutaneous metastasis have been reported in literature since 1970, many of which represented

hematologic malignancies, as well as skin and breast carcinomas. Although the pathogenesis is unknown, they stated a direct invasion from underlying structures as a possibility.[2,4,8]

Identifying the primary site of cutaneous metastatic cancer may be difficult, especially when it is not accompanied by other typical symptoms.[6] Imaging, clinical, and laboratory data are important to determine the primary site and extent of metastasis.[6,9] In addition, biopsy and immunohistochemical stains may help characterize the primary tumor.[6,9] The tumor marker CA 19-9 is a highly sensitive marker for pancreatic cancer.[6] CK7 and CEA frequently stain positive in many pancreatic adenocarcinomas as well.[6,9] CK20 expression may be variable, and a study by Matros et al[10] demonstrated that CK20 expression is present in 63% of pancreatic adenocarcinomas. The same study concluded that patients who have tumors with low CK20 expression have a significantly longer overall postoperative survival when compared with patients with tumors of high CK20 expression.[10] Clinicians should be aware that cutaneous lesions may be a warning signal of metastatic cancer, including pancreatic cancer. A high index of suspicion should be maintained particularly in patients with a history of cancer.

Conflicts of interest

None disclosed.

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