Non-umbilical Cutaneous Metastasis of Pancreatic Adenocarcinoma as the First Clinical Manifestation: A Case Report

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Non-umbilical cutaneous metastases from pancreatic adenocarcinomas are extremely rare. Only a few cases have been reported in the literature. An 83-year-old Korean woman, with no previous medical history, presented with a painful nodule on her scalp. Histologic examination of the nodule revealed a metastatic adenocarcinoma, and immunohistochemical staining was positive for cytokeratin (CK) 7 and CK 19. These findings were consistent with a metastatic carcinoma of pancreatic origin. An abdominal computed tomography scan identified a mass on the pancreatic head and multiple enlarged lymph nodes. Pathological examination of an endoscopic ultrasound-guided fine needle biopsy of the pancreatic mass determined that it was a poorly differentiated carcinoma. The patient refused any treatment owing to her old age and short life expectancy. Four months later, the disease progressed rapidly, and the patient died. (Korean J Gastroenterol 2016;68:221-224)

Key Words: Pancreatic neoplasms; Cutaneous; Neoplasm metastasis; Immunohistochemistry

INTRODUCTION

Cutaneous metastasis from pancreatic cancer is very rare, but usually occurs in close proximity to the umbilicus and is termed ‘Sister Mary Joseph’s nodule’. Non-umbilical cutaneous metastasis from pancreatic cancer is exceedingly rare with very few cases reported in the literature. Here, we report a case of non-umbilical cutaneous metastasis as the first clinical presentation of a pancreatic cancer. The case serves as a reminder that pancreatic cancer may be considered in the initial differential diagnosis of patients who present with this clinical sign.

CASE REPORT

An 83-year-old Korean woman, who was in good general health, noticed a small nodule on her scalp two weeks prior. She visited the dermatology department for evaluation of the nodule, which measured approximately 1.0×1.0 cm. It was firm, painful, and non-pruritic, with a central plug (Fig. 1). Around the time the patient discovered the scalp lesion, she developed upper abdominal pain that radiated to her back. Associated features were anorexia and weight loss. A biopsy was obtained, and pathological examination revealed a poorly-differentiated metastatic adenocarcinoma of unknown primary site. Immunohistochemical staining revealed that...
the lesion was positive for cytokeratin (CK) 7 and CK 19, and negative for CK 20, thyroid transcription factor-1 and p63 (Fig. 2). The patient was referred to the gastroenterology department for further investigation of the source of the scalp lesion and the cause of the associated symptoms. On physical examination, no further abnormalities were identified, with the exception of mild tenderness on the epigastric area. Routine blood chemistry tests revealed only a slightly elevated level of amylase (146 U/L; normal range, 22-80 U/L), but there was a remarkable elevation in the serum level of the tumor marker CA 19-9 (348.2 U/mL; normal range, 0-37 U/mL). Abdominal CT was performed, revealing a 1.4-cm, ill-defined, ovoid low-density lesion in the pancreatic head with upstream pancreatic duct dilatation and multiple small lymph nodes in the left gastric, common hepatic, peripancreatic, portacaval, aortocaval, and paraaortic areas (Fig. 3). To confirm histology of the pancreatic lesion, an endoscopic ultrasound-guided fine needle aspiration biopsy was performed. Pathological analysis revealed a poorly differentiated carcinoma (Fig. 4). The patient refused any treatment owing to her old age and short life expectancy. Three months later, she was hospitalized with severe abdominal pain and anorexia. An abdominal CT showed that the size of the pancreatic head mass had increased to 4.1 cm. It also revealed
Vol. 68 No. 4, October 2016

multiple, newly detected metastases to the liver, adrenal gland, and bones (Fig. 5). The disease progressed rapidly, and one month later, the patient died in the hospital.

DISCUSSION

The incidence of pancreatic cancer has increased over the past few decades and is presently the fifth leading cause of cancer-related deaths in Korea.6 Unfortunately, clinical symptoms and signs are usually absent until the late stages of the disease.7 As a result, the majority of cases are diagnosed with advanced stage disease. Indeed, 80% to 90% of pancreatic cancers are diagnosed either at the locally advanced or metastatic stage.8 The most frequent sites of metastasis are the lymph nodes, peritoneum, liver, lung, adrenal glands, kidney, bone, and brain.7,9 Cutaneous metastases are uncommon in pancreatic cancer.1,10-12 The most common site of cutaneous metastasis from the pancreas is the umbilicus; this type of metastasis is known as ‘Sister Mary Joseph’s nodule’.1,3,8,13 Non-umbilical metastasis from the pancreas, especially to the scalp, is very rare.2,14,15 To the best of our knowledge, there have been only seven reported cases of pancreatic cancer with cutaneous metastasis to the scalp in the English literature.2 Our case demonstrates an extremely rare presentation of pancreatic cancer, in which a metastatic scalp nodule was the first manifestation of the disease.

While several theories regarding cutaneous metastasis have been proposed, no mechanism has been identified.8 These theories include the soil and seed hypothesis, direct invasion, lymphatic or hematogenous dissemination and the chemotaxis hypothesis.1,8,16 According to Zhou et al.,1 the
head of the pancreas is the most common primary tumor site, followed by the tail. However, cutaneous metastases from tumors in the pancreatic head account for a smaller proportion of metastases than those from tumors in the tail. This indicates that tumors of the pancreatic head have a metastatic route different from that of tumors of the pancreatic tail. A recent study reported that the predominant manifestation of cutaneous metastases was a nodule or mass, and that the gross appearance of the cutaneous tumors was oval, firm, and solid.1,5

In our case, detection of the primary source of the cutaneous metastasis was not difficult owing to early intervention via CT examination. However, in other reported cases, identification of the primary source of the cutaneous metastasis was more difficult.2 In such cases, immunohistochemical staining for CKs can be helpful in identifying the primary tumor site.2 In the pancreas, CK 8 and CK 18 are produced by exocrine acinar cells, endocrine islets, and duct cells.1,5 CK 17 and CK 19 are usually detected only in the ductal cells.1,5 Approximately 90% of pancreaticobiliary adenocarcinomas show diffuse positivity for CK 7, while 50% show diffuse positivity for CK 19.5 However, the expression of CK 20 can be variable.7 According to Matros et al.,17 different levels of CK 20 positivity are associated with different clinical outcomes. They demonstrated that a lower degree of CK 20 positivity is associated with better clinical outcome and increased postoperative survival, compared with a higher degree of CK 20 positivity.2,5,17 In our case, the tumor cells were positive for CK 7 and CK 19, and negative for CK 20, consistent with metastasis from the primary pancreatic adenocarcinoma and a poor prognosis.

Cutaneous metastases have very rarely been reported, especially to non-umbilical areas.2,14,15,18 Our patient had a metastatic scalp lesion, an extremely rare presentation of pancreatic adenocarcinoma. Therefore, when a suspicious non-umbilical metastatic cutaneous lesion is identified, the clinician should consider pancreatic cancer presenting with cutaneous lesion as initial sign and further investigation such as immunohistochemical staining for CK 7 and CK 19 is suggested.

REFERENCES