

Case Report

Cutaneous Pancreatic Metastasis: A Case Report and Review of Literature

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Abstract

Observations: Pancreatic cancer is one of the most lethal human cancers and will continue to be a major unsolved health problem as we enter the 21st century. This is the case despite advances in imaging technology and surgical management. Indeed, 80% to 90% of pancreatic cancers are diagnosed either at the locally advanced or metastatic stage. Cutaneous metastases originating from pancreatic cancer are relatively rare. The most common site of cutaneous metastasis is the umbilicus, and this is known as the Sister Joseph's nodule. Very few patients have been reported with cutaneous lesions disclosing a pancreatic carcinoma at sites other than the umbilical area. To our knowledge, there was no previous reports on cutaneous pancreatic metastasis in Egypt. This is a report on a patient with cutaneous pancreatic metastases at the neck, and review of reported non-umbilical cutaneous metastases from pancreatic carcinoma in the literatures.

Case Report

A female patient 55 years old, was referred from Oncology department complaining of multiple asymptomatic reddish skin nodules at the left side of the neck of 3 weeks duration.

The condition started six months before when the patient was admitted because of jaundice and general fatigue accompanied by multiple enlarged firm, non tender left cervical lymph nodes. Laboratory tests showed raised both total and direct bilirubin, raised liver enzymes, hepatitis markers were negative and renal function tests were normal. Chest X-ray was free. Abdominal ultrasound showed a mass located at the head of pancreas measuring about 4.6 x 4.8 cm (AP x W) with multiple enlarged porta hepatitis lymph nodes with evidence of dilated intrahepatic biliary radicals and dilated common bile duct. A computerized tomography scan (CT) of the abdomen revealed enlarged head of pancreas with heterogeneous soft tissue mass measuring 5 x 5 cm. with multiple portahepatis and para-

aortic lymph node enlargements with no evidence of hepatic focal lesions (Figure 1). Metastases elsewhere were not detected by examina-

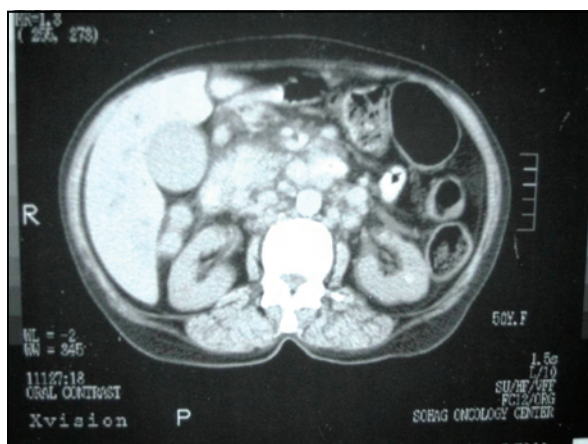


Figure 1. CT scan showing enlarged head of pancreas with heterogeneous soft tissue mass measuring 5 x 5 cm with multiple portahepatis and para aortic lymph nodes with no evidence of hepatic focal lesion



Figure 2. The initial clinical eruption at the left side of the neck

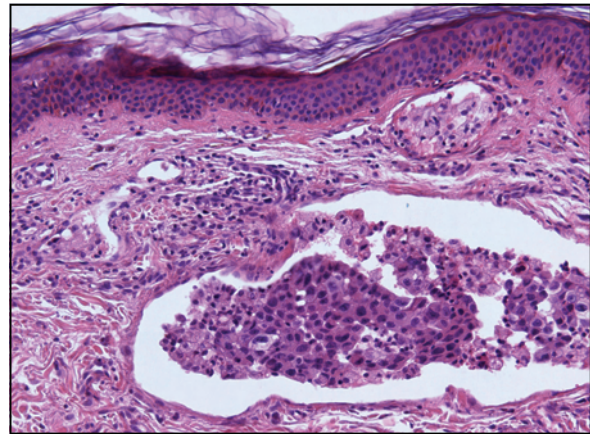


Figure 3. H&E stain dermis occupied by numerous tumour nests

tion and thorough investigations. Abdominal US and CT findings were compatible with a cancer head of pancreas with multiple metastatic abdominal lymph nodes causing common bile duct obstruction. On abdominal exploration, cholecysto-jujnostomy and entero-enterostomy were done but the surgeons refused to take a biopsy from the unresectable mass for fear to be complicated by a pancreatic fistula.

Our patient started palliative cytotoxic treatment. During treatment she developed asymptomatic violaceous nodules and indurated plaques over the skin of the left side of the neck and she was referred for the dermatology department for consultation (**Figure 2**). There were no other similar lesions elsewhere over the body. A lymph node biopsy revealed metastatic carcinoma and skin biopsy revealed nests of poorly differentiated atypical cells throughout the dermis (**Figure 3**). Silver stain and chromogranin were negative while EMA was reactive for tumor cells and CA 19-9 was focally positive (**Figure 4**). In light of the patient's history of a cancer head of pancreas and the positive immunohistochemical stain result with CA 19-9 for skin biopsy, the diagnosis

of a metastatic pancreatic carcinoma was established.

One month later, while receiving the palliative cytotoxic treatment the reddish, non tender indurated plaques increased in size to involve the whole left side of the neck (**Figure 5**). At that time a follow up CT demonstrated decrease in the size of the pancreatic mass to reach a 4 cm cranio-caudal diameter.

Discussion

Pancreatic cancer is the fourth leading cause of cancer death. Currently there is no early diagnostic test and no effective treatment options for this deadly disease [1]. Morbidity and mortality from pancreatic cancer is conspicuously associated with metastasis, the most frequent sites of metastasis are: lymph nodes, lung, liver, adrenal glands, kidney and bones [2]. Cutaneous metastasis are rare [3, 4] and they are generally situated in the periumbilical area

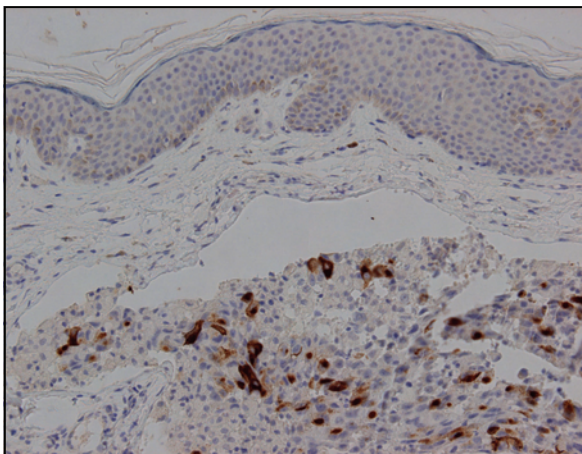


Figure 4. The tumor cells show strong membrane staining for carbohydrate antigen 19-9



Figure 5. one month later, while receiving treatment the reddish, non tender indurated plaques increased in size to involve the whole left side of the neck

Table 1. Review of Cases

Author	Age	Sex	Metastatic Site	Tumor site
1 Sakai et al. [11]	47	M	Herpes zoster like	Head
2 Taniguchi et al. [12]	69	M	Face, Head	Head
3 Taniguchi et al. [12]	67	M	Chest, abdomen	No details
4 Ohhashi et al. [13]	79	M	Neck, chest, abdomen	No details
5 Ohhashi et al. [13]	65	M	Back	No details
6 Sironi et al. [14]	72	M	Right thigh	Head
7 Fukui et al. [15]	49	M	Face, chest	No details
8 Nakano et al. [16]	80	M	Occipital scalp	Tail
9 Miyahara et al. [5]	60	M	Face, neck	Body, tail
10 Miyahara et al. [5]	43	M	Scalp	Uncus
11 Miyahara et al. [5]	65	M	Mentum	Uncus
12 Horino et al. [7]	65	F	Chest wall	Head
13 Ambro et al. [17]	63	M	Scalp	Ductal
14 Florez et al. [18]	48	M	Buttock	Head
15 Takeuchi et al. [9]	77	M	Left axilla	Tail
16 Jun et al. [19]	68	M	Right forearm, chest	Body, tail
17 Our case	55	F	Neck	Head

[5]. The mechanism of cutaneous metastasis is not well described, early studies mostly focused on the “soil and seed” hypothesis. Tumor seeding during resection is a feared complication as recurrence within the peritoneal cavity commonly occurs after resection for curative intent [6]. Also pancreatic carcinoma is known to metastasize rapidly to the lymphatic system by permeation, embolization, and retrograde spread due to lymphatic obstruction in the pancreas [7]. Recently, the chemotaxis hypothesis has been paid more attention where cancer cell with high expression of chemokine receptor will spread to the specific sites where the ligand is highly secreted [6]. Lookingbill et al.[8] reported that cutaneous involvement could occur by three different mechanisms: direct invasion, local metastatic disease or distant metastasis. According to their series this last mechanism is the most uncommon, and when it happens cutaneous lesions arise as multiple nodules grouped in a body area. Takeuchi et al. [9] stated that the most frequent cutaneous metastatic site was the umbilicus, distant spread shows that a pancreatic carcinoma can reach all cutaneous tissue via blood or lymphatic systems.

Miyahara et al. [5] reported 5 cases and reviewed 17 cases of cutaneous metastasis originating from the pancreatic cancer. In 20 cases, the cutaneous metastases were present prior to the diagnosis of pancreatic cancer. In 11 of these cases, the metastatic lesions in the skin were the first symptoms of pancreatic cancer, and in the other 9

cases, the lesions were discovered by physical examination. They stated that the most common site of cutaneous metastases originating from pancreatic cancer was the umbilicus. Although such cases are rare, it is important to note that metastatic lesions in the skin may be the first sign and one type of distant metastases originating from pancreatic cancer. Horino et al. [7] reviewed 49 reported cases of pancreatic metastasis from 1950 to 1999. In the majority of cases, skin metastatic lesions were the first signs of the pancreatic cancer. Moreover, 90.3% of the cases had multiple organ metastases or peritoneal seeding. Only four cases are alive with skin metastases from pancreatic carcinoma on the reports. Two of the four cases underwent resection of the pancreas. Their skin metastatic lesions were first noted on physical examination after resection (details were not described). The other two cases underwent chemotherapy (details were not described).

After conducting a detailed PubMed search, Yendluri et al. [10] reviewed the published English and Japanese literature from the last 90 years, they identified 57 cases of Sister Joseph's nodule originating from the pancreas. Although 70% to 80% of pancreatic adenocarcinomas arise in the head of the pancreas, in patients presenting with a Sister Joseph's nodule, the majority (91%) were in the tail and body of the pancreas. This may relate to the propensity for tail of pancreas cancers to remain asymptomatic until a later stage when distant metastasis has already occurred.

The author, after reviewing the published data, have found 16 cases, excluding our case, with non-umbilical cutaneous metastasis (**Table 1**). Patients with metastasis to the skin incision or at sites of drain were excluded in this search. Of the 17 cases reviewed (15 men and 2 women), The location sites of primary pancreatic carcinoma were at the head in 52.8% of the cases, 23.7% were located at the body and/or tail and 23.5% no details were given about the site of the primary pancreatic carcinoma. The majority of skin metastasis reported in the literature occurred after palliative procedures, in which the tumor burden remains. In our case, the first skin metastasis was not to the umbilicus, but to the left side of the neck, the metastatic process was confirmed by CT examination, the primary tumor was found at the head of the pancreas. The focal positive staining of skin biopsy with CA 19-9 supported our diagnosis. Based on the relative frequency of this phenomenon, this case represents a scenario that validates that non-umbilical cutaneous pancreatic metastasis arises secondary to a primary pancreatic cancer located at the head of pancreas.

Conclusion: Carcinomas of the pancreas represent less than 5% of human malignant neoplasms, skin involvement is rare, and metastasis is generally situated at the umbilical area. We describe an interesting case of cutaneous pancreatic metastasis. To our knowledge, very few patients have been reported with cutaneous metastasis at the neck disclosing a pancreatic carcinoma. making this case especially interesting. This is the first case of cutaneous pancreatic metastasis to be reported in Egypt.

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