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Case Report

Emergency Mastectomy for a Large Breast Mass: Unusual Presentation of Disseminated Pancreatic Adenocarcinoma

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Abstract

Metastasis to breast from extramammary primary tumors is rare and account for 0.2% to 1.3% of malignant tumors in the breast. Pancreatic malignancies do not usually metastasize to the breast and very few cases have been reported in the literature. In this case report, we present an 81-year-old Caucasian female presenting with a large fungating breast mass with severe bleeding. Urgent mastectomy was performed, and pathology of the breast tumor was most consistent with a pancreatic tumor metastasizing to the breast. Palliative mastectomy for bleeding breast mass has been reported for other primary cancers and our case report is the first one reporting urgent palliative mastectomy for this histopathology. Emergency mastectomy should be considered for the rare presentation of exsanguinating hemorrhage from a large breast mass if the mass is deemed resectable from the chest wall.

Introduction

Metastasis to breast from extramammary primary tumors is rare. Indeed, they account for 0.2% to 1.3% of malignant tumors in the breast [1,2] and are more commonly found post-mortem. Common primary extramammary malignancies to metastasize to the breast are lymphomas, melanomas and carcinomas of the lungs, ovary, prostate, kidney and stomach [3]. Pancreatic malignancies do not usually metastasize to the breast and very few cases have been reported in the literature. In 2021, pancreatic cancer was estimated at 60. 430 new cases per year in the United States and had one of the lowest 5-year relative survival rate with all stages combined at 10% [4]. Most common sites of pancreatic cancer metastases are the lungs, liver and bone marrow [5].

Case Presentation

An 81-year-old Caucasian female, independently living at home, presented to the emergency room on March 14th, 2022 with bleeding of a known left breast mass following a fall. Being on rivaroxaban for treatment of a previous pulmonary embolism, the fungating breast mass had intractable bleeding (Figure 1), resulting in hypotension and the need for transfusion of multiple units of pRBC.

The patient was previously told by her family physician that she likely had breast cancer in January 2022 and only reported starting to feel a lump in her left breast in December 2021. The mass rapidly grew within months. The patient had previously refused treatment in January and, in addition, the rapid growth precluded a proper workup. Due to the instability of the patient and the fact that the mass was deemed resectable, an emergency simple mastectomy was performed with primary skin closure.

Imaging of abdomen and pelvis (CT with contrast) were performed for staging and revealed a pancreatic head mass of 2.2 cm with upstream atrophy and pancreatic duct dilatation (Figure 2). No masses were seen in the liver, bones, lungs, or pelvis. In addition, tumor markers analysis revealed that Cancer antigen 15-3 was within normal range, while Cancer antigen 19-9 was very elevated with 14441.0 U/mL (normal range 0 U/mL-35 U/mL).

Figure 1: Fungating left breast mass with intractable bleeding in emergency department.

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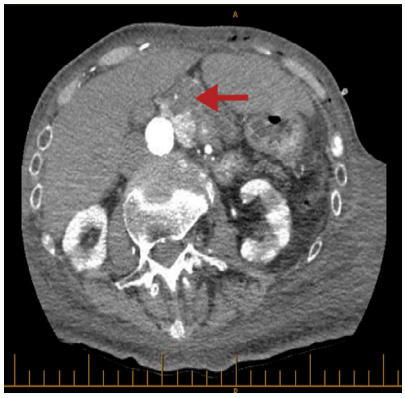

Figure 2: Contrast-enhanced CT abdomen demonstrating the hypoattenuated pancreatic head mass measuring 2.2 cm × 3 cm × 2.8 cm (red arrow).

Pathological examination of the breast tumor was performed post mastectomy to confirm the etiology of the mass. A tumor of 16.6 cm, high grade with lymphovascular invasion and skin ulceration was described. Histologically, the tumor showed features of a mucinous cystadenocarcinoma (Figure 3). No in-situ lesions (ductal carcinoma in-situ) were identified and the tumor was triple negative (estrogen, progesterone and Her 2 receptor negative). Other immunohistochemistry revealed CK7+/CK20+, GATA3- and CDX2-. This was most consistent clinically and histologically with pancreatic cancer metastasizing to the breast.

The patient recovered well from the surgery. Her level of care was discussed conjointly with the daughter and a decision to apply to hospice was deemed most appropriate. The patient passed away on April 11, 2022.

Discussion

We present a rare case of pancreatic cancer metastasizing to the breast and causing impaired quality of life of a previously independent living woman. To the best of our knowledge, the first case of pancreatic cancer metastatic to breast was reported in 1983 [6]. The reported cases published in French and English in the following years are summarized in Table 1.The majority of patients had Pancreatic Neuroendocrine Tumor (PNET) as their primary. The metastasis to the breast was the initial presenting symptom of the cancer in about one third of those patients.

In general, breast metastases from extramammary malignancies have poor prognosis as disease is already widely disseminated [2]. There is no consensus on how to manage this type of advanced disease. Due to breast cancer being more prevalent in the population, breast metastasis can be misdiagnosed as primary breast carcinoma, as it was the case for our patient. This misdiagnosis can greatly affect management. Out of the reported cases, half had breast masses found at the same time as pancreatic masses and the other half found at least 6 months later. Medical treatment was initiated in 6 cases and only one received palliative mastectomy, later in their treatment.

We opted for urgent surgical resection with patient's consent due to the exsanguinating hemorrhage. Palliative mastectomy for fungating bleeding breast mass has been reported for other primary cancers [7] and our case-report would be the first report of such management for this type of cancer presentation. This management improved the patient's quality of life which should be prioritized in this condition. We believe it can be offered for patients with this rare presentation as long as the tumor is deemed resectable.

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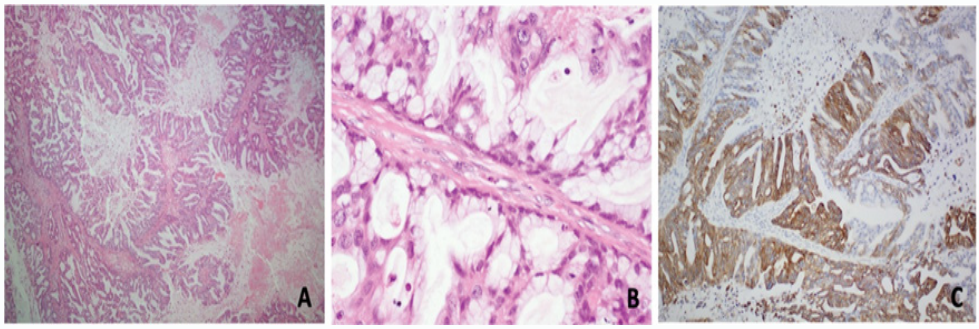

Figure 3: (A). Hematoxylin &Eosin stained section at 40x magnifications, showing cystic spaces with protruding papillary structures. (B). Hematoxylin &Eosin stained section at 200x magnification showing papillary structures lined by malignant neoplastic cells with intracytoplasmic mucin and atypia. (C). Immunohistochemistry for cytokeratin 20 at 100x magnification, showing positive expression, a finding rare in primary breast tumors but commonly associated with metastatic tumors from pancreas and gastrointestinal tract.

Table 1: Summary of published case reports of pancreatic malignancies metastasizing to the breast.

Authors	Year	Age/Gender	Presentation of the breast metastasis	Time of mass diagnosis	Mass in initial presentation	Primary Tumor	Management
Vassallo et al. [8]	2021	54F	Bilateral palpable breast lumps	Synchronous	Yes	PNET	Octreotide
Zagami et al. [9]	2020	40F	Bilateral breast nodules on mammogram	Metachronous	No	PNET	Chemotherapy
Kumari, Singh and Zaheer [10]	2019	40F	Bilateral palpable breast lumps	Metachronous	No	PNET	Chemotherapy
Amin and Kong [11]	2011	69F	Asymptomatic breast densityon screening mammogram	Synchronous	Yes	PNET	Liver radiation therapy, chemotherapy and octreotide
Neuzillet et al. [12]	2009	49F	Palpable breast lump	Metachronous	No	Pancreatic desmoplastic small round cell tumor	Chemotherapy and mastectomy
Ordóñez, Manning and Raymond [13]	1985	41F	Palpable breast lump	Synchronous	No	Carcinoid islet-cell	Chemotherapy was refused
McCrea, Johnston and Haney [6]	1983	Not reported	Not reported	Not available	Not available	Adenocarcinoma	None :Retrospective data

CT: Computed Tomographic; PNET: Pancreatic Neuroendocrine Tumor; US: Ultrasound

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