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Case Report Open Access

Renal Metastases of Pancreatic Medullary Carcinoma: A Case Report

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Abstract

In this report, we present a case of a 69-year old female who underwent a mastectomy for bilateral breast carcinoma. She was treated with radiation and chemotherapy. Fifteen years later, a follow-up computer-tomography revealed two tumor nodules on the left kidney measuring 1 and 3 cm with enlarged paraaortic lymph nodes measuring up to 2.5 cm in diameter, clinically suggesting further dissemination of breast cancer. Surprisingly, surgery revealed a huge neoplastic mass in the pancreatic tail. A pancreatic tumor showed a strongly positive immunohistochemical expression for CK-8 (MSIP protocol), CK-18 and MUC-1 markers.

Keywords: Pancreas; Cancer; Differential diagnosis

Introduction

An infiltrating ductal adenocarcinoma of the pancreas is a malignant epithelial neoplasm with glandular differentiation that is one of the most lethal of all solid malignancies in human pathology. Estimation is that about 213,000 patients die each year from pancreatic cancer worldwide, and this number will only be higher as the population ages. The majority of these tumors are diagnosed between ages of 60 and 80 years. Pancreatic cancer rarely occurs in patients younger than 40 years of age. Well- established risk factors are cigarette smoking, a family history of pancreatic carcinoma, diabetes mellitus and obesity. Only 20% of patients are surgical candidates at the time of diagnosis, due to the fact that most patients do not develop symptoms until the cancer has metastasized [1,2]. Differentiating pancreatic cancer from chronic pancreatitis is one of the most difficult tasks in surgical pathology, as it is sometimes impossible to distinquish histologically benign reactive changes of glands in chronic pancreatitis from an infiltrating tumor glands of well differentiated pancreatic cancer [3-5]. Medullary carcinoma of the pancreas was described by Goggins et al. [6] for the first time in 1998 as a histologically distinct subtype of poorly differentiated adenocarcinomas. According to some authors these tumors may have a specific carcinogenesis and distinct clinical course. As in the present case, they frequently show a syncytial growth pattern with poorly defined cellular boundaries, pushing (expanding) tumor mass borders, and an extensive foci of necrosis. Some tumors may have additional histological features like: foci of clear cells, focal microglandular growth patterns, areas of squamous differentiation of lymphoepithelioma like features.

Methods

In order to establish a correct diagnosis, after routine and histochemical analysis, an immunohistochemical analysis was performed on formallin-fixed, paraffin embedded sections with monoclonal antibodies against CK-7

(M7018, dilution 1:1000, DAKO Glostrup, Denmark); CK-18 (M7010, dilution 1:25-1:50, DAKO); CK-20 (M7019, dilution 1:25-1:50, DAKO); vimentin (M0725, dilution 1.600, DAKO); and CK-5 (XM26, dilution1:100, Novocastra, Newcastle upon Thyne, England); CK-8 (MSIP protocol, Novocastra); MUC-1 (Ma695, dilution 1:100, Novocastra); synaptophysin (NCL-L-Synapt-299, dilution 1:3000, Novocastra).

Case Report

We present a case of a 69-year old female who underwent a mastectomy for bilateral breast carcinoma fifteen years ago. She was treated with radiation and chemotherapy. Thirteen years later, after an initial surgical treatment, bilateral adrenal metastases were found and surgically removed.

Two years later, a follow-up computer- tomography revealed two tumor nodules on the left kidney measuring 1 and 3 cm in diameter together with enlarged paraaortic lymph nodes measuring up to 2.5 cm in diameter, clinically suggesting further dissemination of breast cancer.

Surprisingly, surgery revealed a huge neoplastic mass in pancreatic tail together with the before mentioned kidney tumors and enlarged paraaortic lymph nodes. A partial pancreatectomy with partial resection of left kidney and paraoartic lymphadenectomy was performed. Grossly, cross sections of a resected pancreatic specimen measuring 10x5x3.5 cm revealed whitish, nodular appearing tumor mass measuring up to 6 cm in its greatest dimension compressing residual glandular tissue to a narrow rim. Pathohistological analysis revealed a tumor displaying a syncytial growth pattern of round to polygonal poorly differentiated epithelial cells with brisk mitotic activity (up to 15 mitotic figures/10 HPF), and frequent perineurial invasion (Figure 1).

Immunohistochemistry showed expression of CK-8, 18, and MUC-1 (Figure 2). There is also a focally accentuated synaptophysin reactivity (though negative reaction on chromogranin). Tumor cells did not stain for CK-5,6,7,20 and vimentin.

The same tumor cells were present in the kidney and lymph nodes. Final pathohistological diagnosis was medullary carcinoma of pancreas with metastatic involvement of kidney and paraaortic lymph nodes. The patient died 18 months after diagnosis was performed.

Discussion

Medullary carcinomas are genetically different from conventional

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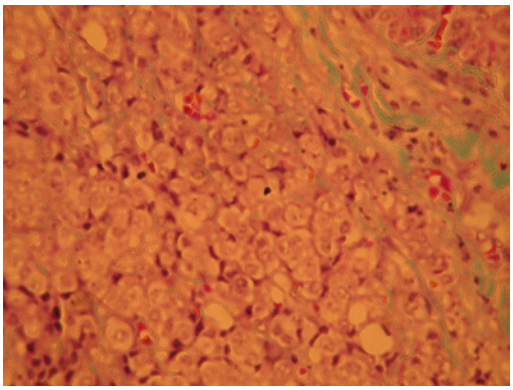

Figure 1: Expanding tumor borders of medullary pancreatic carcinoma compressing residual glandular tissue (Mallory x 400).

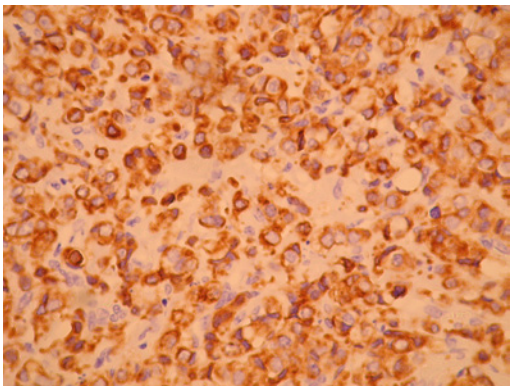

Figure 2: Strongly positive immunohistochemical reaction for CK-8 (MSIP x 400).

ductal carcinomas of the pancreas. Three out of five medullary carcinomas described by Goggins et al. [6] showed both Microsatellite Instability (MSI) and a wild type K- ras gene. These results are not typical for conventional ductal adenocarcinomas which almost always harbor K-ras gene mutations and seldom if ever have MSI. Further investigations with a larger series of medullary carcinomas have elucidated clinical and genetic features associated with medullary morphology. Willentz et al. [7] in their study revealed that immunohistochemistry for DNA repair enzymes identify patients with medullary pancreatic carcinomas as having MSI. When the immuno labeling reveals the loss of the expression of one of the DNA mismatch repair proteins MIh1 and Msh 2, those tumors could than be tested for MSI using microsatellite markers. Willentz et al. [7] also found that medullary phenotype correlates significantly with family history of any cancer in a first degree relative, thus allowing a pathologist to use pancreatic tumor histology to identify an inherited susceptibility to cancer. Therefore, diagnosis of a medullary carcinoma of the pancreas should initiate investigation of cancer history among a patient's relatives. Some studies have suggested that these distinctive neoplasms have better prognosis than ductal adenocarcinomas.

The pathologist should distinquish medullary carcinomas from conventional ductal adenocarcinomas, because a medullary phenotype may have distinct pathogenesis, and can be a most important clinical clue to the presence of an inherited cancer syndrome, including a hereditary nonpolyposis colorectal carcinoma (HNPCC). Further study of this family association is needed.

References

1. Hruban RH, Fukushima N (2007) Pancreatic adenocarcinoma: update on the surgical pathology of carcinomas of ductal origin and PanINs. Mod Pathol 20: S61-S70.
2. Chari ST, Leibson CL, Rabe KG, Ransom J, de Andrade M, et al. (2005) Probability of pancreatic cancer following diabetes: a population-based study. Gastroenterology 129: 504-511.
3. Sharma S, Green KB (2004) The pancreatic duct and its arteriovenous relationship: an underutilized aid in the diagnosis and distinction of pancreatic adenocarcinoma from pancreatic intraepithelial neoplasia. A study of 126 pancreatectomy specimens. Am J Surg Pathol 28: 613-620.
4. Kloppel G, Hruban RH, Longnecker DS, Adler G, Kern SE, et al. (2000) Ductal adenocarcinoma of the pancreas. In: Hamilton SR, Aaltonen LA World Health Organisation Classification of Tumours. Pathology and Genetics of Tumours of the Digestive System. IARC Press, Lyon, France 221-230.
5. Lee MJ, Lee HS, Kim WH, Choi Y, Yang M (2003) Expression of mucins and cytokeratins in primary carcinomas of the digestive system. Mod Pathol 16: 403-410.
6. Goggins M, Offerhaus GJ, Hilgers W, Griffin CA, Shekher M, et al. (1998) Pancreatic Adenocarcinomas with DNA Replication Errors (RER+) are associated with Wild-Type K-ras and Characteristic Histopathology. Poor differentiation, a Syncytial Growth Pattern, and Pushing Borders Suggest RER+. Am J Pathol 152: 1501-1507.
7. Wilentz RE, Goggins M, Redston M, Marcus VA, Adsay NV, et al. (2000) Genetic, immunohistochemical, and clinical features of medullary carcinoma of the pancreas: a newly described and characterised entity. Am J Pathol 156: 1641-1651.