C14

Management of Breast Metastases from Gastroenteropancreatic Neuroendocrine Tumor Origin

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Background: Solid tumor metastases to the breast are rare. Of these, neuroendocrine tumors (NET) metastatic to the breast have been rarely reported. We describe our single-institution experience managing breast metastases from gastroenteropancreatic NETs.

Methods: Moffitt Cancer Center tumor registry and pathology queries were conducted searching for NET metastases to the breast. Breast carcinoma with neuroendocrine features, bronchial NETs and primary breast NETs were excluded. Descriptive statistics were performed.

Results: Seventeen patients (median age 52 years) were identified with pathologically confirmed gastroenteropancreatic NET metastases to the breast. (Table 1) The majority (88%) initially presented with stage IV disease. Five patients (29%) had synchronous breast metastases and were initially misdiagnosed as primary breast carcinomas. Twelve patients (71%) had metachronous metastases; median 28 months from initial diagnosis (range 3-200 months). Breast metastases were managed with excision in 13 (76%, median tumor size 1.0 cm) for diagnosis or palliation. Symptomatic ovarian metastases were resected in 4 (36%). Carcinoid syndrome was present in 16 patients (94%), all managed with octreotide therapy. At a median follow up of 68 months (range 16-250 months) from diagnosis, 13 patients (76%) remained alive while 4 (24%) had died of disease.

Conclusion: Breast metastases from gastroenteropancreatic NETs are rare. A diagnosis of breast cancer in the setting of NET warrants consideration of metastatic disease. Excision may be considered for definitive diagnosis or palliation. Long-term survival is possible despite advanced stage at diagnosis.

Table 1. Management of breast metastases from gastroenteropancreatic neuroendocrine tumor origin.

Variable	N (%)
Median Age (range in years)	52 (36-70)
Stage IV at Diagnosis	15 (88)
Primary NET Site of Origin	
Small Intestine	16 (94)
Pancreas	1 (6)
Method of Breast Diagnosis	
Abnormal Mammogram	6 (35)
Palpable Mass	4 (23)
Octreoscan	2 (12)
CT Scan	1 (6)
Unknown	4 (23)
Breast Presentation	
Synchronous	5 (29)
Metachronous	12 (71)
Median Time to Breast Disease (range in months)	28 (0-200)
Lumpectomy	13 (76)
Sentinel Lymph Node Biopsy	3 (18)
Misdiagnosed as Breast Cancer	5 (29)
Ovarian Metastasis	5 (29)
Median Primary NET Tumor Size (range in cm)	3.05 (0.8-5.2)
Primary Lymph Node Positive Disease	11 (65)
Removal of Primary Tumor	12 (71)
Carcinomatosis	9 (53)
Adjuvant Chemotherapy	5 (29)
Octreotide	16 (94)
Interferon	4 (24)
Status at last known follow up	
Alive	13 (76)
Dead	4 (24)
Median length of FU (months)	68 (16-250)