Small Cell Carcinoma of the Breast

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INTRODUCTION

Small cell carcinoma of the breast (SCCB) is a rare, highly aggressive neoplasm first reported in 1983. With striking histologic similarity to small cell carcinoma of the lung, it is comprised of small cells with relatively large, hyperchromatic nuclei and scanty cytoplasm. While capable of hormone secretion, this is a rare occurrence in this variant of small cell carcinoma. Patients typically present with a suspicious breast mass confirmed on imaging, with variable lymph node invasion.

EPIDEMIOLOGY

- SCCB is responsible for <1% of all breast neoplasms
- Average survival following diagnosis is only 7 months
- Peak onset is in the sixth and seventh decades of life with an average age of onset of 55 years old
- The overwhelming majority of cases are female, with only one reported case of SCCB in a male

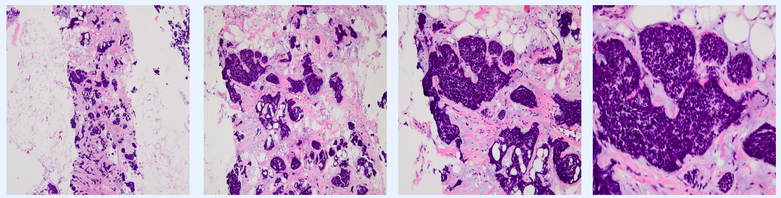
CASE STUDY

A 55 year old female presented with a palpable mass in the left breast. The biopsy revealed poorly differentiated invasive cancer with histologic features consistent with small cell carcinoma. Positive staining for pancytokeratin and e-cadherin confirmed the diagnosis of invasive carcinoma. Estrogen, progesteron receptors and Her2 stains were negative. Neuroendocrine markers chromogranin, synaptophysin, NSE were also negative.

The patient underwent 4 cycles of cisplatinum and etoposide therapy; she responded well to therapy and is alive and doing well.

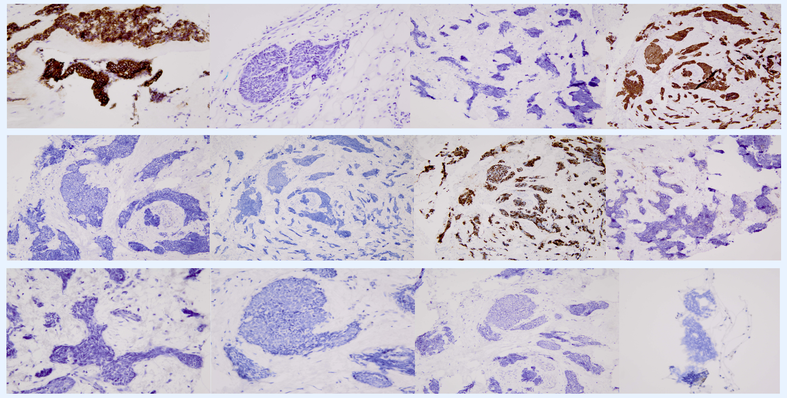
CASE STUDY (CONTINUED)

H&E: histology consistent with small cell carcinoma



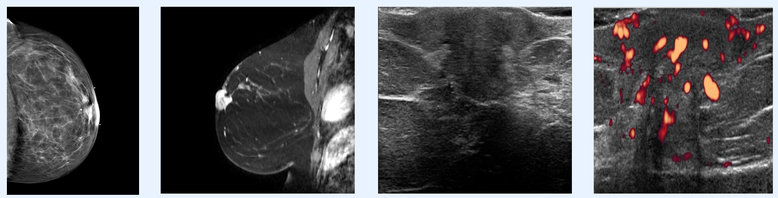
Left to right: H&E at 4X, 10X, 20X, 40X

IHC: diffusely positive for AE1/AE3, ECAD, & Ki67



Top row, left to right: AE1/AE3, chromogranin, CK20, ECAD
Middle row, left to right: ER, Her2, Ki67, NSE
Bottom row, left to right: CALP, PR, synaptophysin, TTF-1

Imaging: mammogram, MRI, ultrasound, Doppler



DISCUSSION

In addition to SCCB, the differential diagnosis for a suspicious breast mass includes:

Differential diagnosis of breast neoplasm		
Invasive breast ductal carcinoma	Invasive breast lobular carcinoma	SCCB
Metastasis from lung or melanoma	Merkel cell tumor	Lymphoma

The following characteristics are suggestive of SCCB:

Common characteristic of SCCB	
Small cell morphology	Neuroendocrine markers (Chromogranin, synaptophysin, NSE)
Exclusion of metastasis from another site	

CONCLUSION

SCCB is an uncommon neoplasm characterized by morphologic neuroendocrine appearance (despite negative IHC stains) and poor prognosis.

This study examined the case of a 55 year old female with SCCB, diagnosed using histologic and immunohistochemistry findings.