

Criteria	Yes	No
Diagnosis Discrepancy		<input checked="" type="checkbox"/>
Primary Tumor Site Discrepancy		<input checked="" type="checkbox"/>
HIPAA Discrepancy		<input checked="" type="checkbox"/>
Prior Malignancy History		<input checked="" type="checkbox"/>
Dual/Synchronous Primary Noted		<input checked="" type="checkbox"/>
Case is (circle): <u>RE</u> QUALIFIED / DISQUALIFIED		
Reviewer Initials: <u>lw</u> Date Reviewed: <u>10/21/11</u>		

UID:13302EC6-6511-42FE-AA8B-C875B5384FFE  
TCGA-A1-A0SK-01A-PR Redacted



ICD-0-3

Carcinoma, neuroendocrine, large cell type 8013/3

Site: breast, NOS C50.9 lw 10/21/11

### Final Pathologic Diagnosis:

A. Sentinel lymph node #1, right axilla, biopsy: No carcinoma identified in one lymph node (0/1).

B. Sentinel lymph node #2, right axilla, biopsy: No carcinoma identified in two lymph nodes (0/2).

C. Right breast, new inferior margin, excision: Benign breast tissue, no carcinoma identified.

D. Sentinel lymph node #3, right axilla, biopsy: No carcinoma identified in one lymph node (0/1).

E. Right breast, partial mastectomy:

1. Neuroendocrine carcinoma, large cell type, high grade, SBR grade 3, 3.8 cm diameter, extending to deep resection margin and 0.1cm from anterior/superior margin; see comment.

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2. Microcalcifications associated with benign breast tissue.

F. Right breast, new posterior margin, excision: Benign breast tissue, no carcinoma identified.

**Note:** Immunohistochemical studies were necessary to evaluate this case and establish the correct diagnosis. The following immunohistochemical stains were performed and evaluated:

Keratin cocktail: Patchy positive.

CD56: Positive.

PAX-5: Positive.

LCA: Negative.

Chromogranin: negative.

Synaptophysin: negative.

E-Cadherin: negative.

The negative staining with LCA rules against a lymphoid neoplasm. Negative E-Cadherin excludes a ductal carcinoma. The positive staining with PAX-5, CD56 and patchy cytokeratin staining as well as the morphology on H&E stain are compatible with a neuroendocrine carcinoma. Negative staining with chromogranin and synaptophysin, although expected in this entity, does not exclude it.

***Breast Tumor Synoptic Comment***

- Laterality: Right.
- Invasive tumor type: Large cell neuroendocrine carcinoma, high grade.
- Invasive tumor size: 3.8 cm maximum diameter.
- Invasive tumor grade (modified Bloom-Richardson): 3.
  - Nuclear grade: 3 points.
  - Mitotic count: 2 points.
  - Tubule/papilla formation: 3 points.
  - Total points and overall grade = 8 points = Grade 3.
- Lymphatic-vascular invasion: Absent.
- Resection margins for invasive tumor:
  - Deep margin: Positive; (slide E12).
  - Medial margin: Negative; (tumor is >1 cm away).
  - Lateral margin: Negative; (tumor is >1 cm away).
  - Anterior/superior margin: Close; (tumor is less than 0.1 cm away, on slide E7).
  - Anterior/inferior margin: Negative; (tumor is 0.25 cm away, on slide E15).
- Lymph node status:
  - Number of positive lymph nodes: 0.
  - Total number sampled: 4.
- AJCC/UICC stage: pT2N0MX.

An immunohistochemical test for estrogen and progesterone receptors as well as for HER2 was performed on block E9.

The test for estrogen receptors is negative. There is no nuclear staining in any of tumor cells. Internal positive control is present.

The test for progesterone receptors is negative. There is no nuclear staining in any of tumor cells. Internal positive control is present.

Result of HER2/neu test: This carcinoma is negative for HER2/neu oncoprotein over-expression.

An immunohistochemical assay was performed using the CB11 monoclonal antibody to HER2/neu oncoprotein. The staining intensity of this carcinoma was 0 on a scale of 0-3 (HER2 test interpreted

by Dr.

Carcinomas with staining intensity scores of 0 or 1 are considered *negative* for over-expression of HER2/neu oncoprotein.

Those with a staining intensity score of 2 are considered *indeterminate*. We and others have observed that many carcinomas with staining intensity scores of 2 do not show gene amplification. All carcinomas with staining intensity scores of 2 are therefore submitted for FISH testing. The results of the FISH test are issued directly from the molecular cytogenetics laboratory.

Carcinomas with staining intensity scores of 3 are considered *positive* for over-expression of HER2/neu oncoprotein. Tumors in this category show an excellent correlation between the results of immunohistochemical and FISH testing, and almost always show gene amplification.

### Intraoperative Consult Diagnosis

FS1 (A) Sentinel lymph node #1, right axilla, biopsy: No carcinoma. (Dr.

FS2 (B) Sentinel lymph node #2, right axilla, biopsy: No carcinoma. (Dr.

FS3 (C) Right breast, new inferior margin, biopsy: No carcinoma. (Dr.

FS4 (D) Sentinel lymph node #3, right axilla, biopsy: Rare atypical cells in subcapsular space. (Dr.

### Clinical History

The patient is a -year-old woman with post-operative diagnosis of breast cancer, who undergoes sentinel lymph node biopsy and right partial mastectomy.

### Gross Description

The specimen is received fresh in six parts, each labeled with the patient's name and medical record number.

Part A, additionally labeled " " consists of one soft tan-yellow fatty tissue fragment measuring 2.5 x 1.1 x 0.4 cm. The specimen is trimmed, and one candidate lymph node is found. The lymph node is bisected. Touch preps and smear preps are made. The node is submitted for frozen section diagnosis 1 and subsequently submitted in cassette A1. The remaining yellow fatty tissue is submitted in cassette A2.

Part B, additionally labeled " " consists of one soft tan-yellow fatty tissue fragment measuring 2.5 x 0.6 x 0.7 cm. The specimen is trimmed, and one large lymph node is found. The lymph node is bisected. Touch preps and smears are made. The node is submitted for frozen section diagnosis 2, and subsequently submitted in cassette B1. The remaining yellow fatty tissue is submitted in cassette B2.

Part C, additionally labeled " " consists of one firm, unoriented, off-white/tan and yellow tissue fragment measuring 2.3 x 2 x 0.8 cm. The specimen is bisected at the long axis and one-half is submitted for frozen section diagnosis 3, and subsequently submitted in cassette C1. The remaining half is submitted in cassette C2.

Part D, additionally labeled " " consists of one soft and firm pink-red unoriented tissue fragment measuring 0.8 x 0.7 x 0.4 cm. The specimen is bisected and touch preps and smears are made. The bisected node is submitted for frozen section diagnosis 4, and subsequently submitted in cassette D1.

Part E, additionally labeled " " consists of an oriented, roughly ovoid fragment of fibrofatty breast tissue containing a firm palpable mass. The specimen is oriented with two surgical sutures, per the requisition sheet. The short suture is superior and the long suture is lateral. Oriented as such, the specimen measures 5.7 cm from superior to inferior, 6 cm from medial to lateral, and 3.6 cm from anterior to posterior. The specimen is inked for microscopic evaluation, with the anterior superior surface inked in blue, the anterior inferior surface inked in green, and the posterior surface inked in black. The specimen has been previously incised, prior to receipt in Pathology, and the sections removed from the aforementioned central mass. The specimen is serially

sectioned in the sagittal plane into fifteen slices and numbered 1-15, medial to lateral. The medial slice (slice 1) is 0.9 cm in thickness. The lateral slice (slice 15) is 0.9 cm in thickness. The remainder of the slices averages 0.4 cm in thickness. Serial sectioning reveals a firm, tan-white, nodular lesion, which spans serial slices 2-14. This multilobulated mass measures 3.8 cm from superior to inferior, 3 cm from anterior to posterior, measured in slice 7. The mass grossly approaches the posterior margin in slices 6-8. The mass is 0.2 cm from the anterior superior margin in slice 4 and 0.8 cm from the anterior margin in slice 7. The medial and lateral margins are grossly clear (>1 cm). Representative sections are submitted as follows:

Cassette E1: Medial margin, slice 1 (representative perpendicular section).  
Cassette E2: Medial one-third, slice 2 (medial-most extent of lesion).  
Cassette E3: Superior posterior, slice 4.  
Cassette E4: Superior anterior, slice 4.  
Cassette E5: Anterior superior, slice 5.  
Cassette E6: Superior posterior, slice 5.  
Cassette E7: Anterior superior, slice 7.  
Cassette E8: Superior posterior, slice 7.  
Cassette E9: Anterior inferior, slice 7.  
Cassette E10: Inferior posterior, slice 7.  
Cassette E11: Anterior superior, slice 8.  
Cassette E12: Superior posterior, slice 8.  
Cassette E13: Anterior superior, slice 11.  
Cassette E14: Superior posterior, slice 11.  
Cassette E15: Anterior inferior, slice 11.  
Cassette E16: Inferior posterior, slice 11.  
Cassette E17: Superior half, slice 14.  
Cassette E18: Inferior half, slice 14.  
Cassettes E19-E20: Medial portion of lateral margin, slice 15 (perpendicularly sectioned).

Part F, additionally labeled

consists

of a grossly unremarkable fragment of fibrofatty breast tissue sutured to Telra and oriented by two surgical sutures, per the specimen container labels. The short stitch is superior and the long stitch is lateral. Oriented as such, the specimen measures 4.5 cm from superior to inferior, 3.7 cm from medial to lateral, and 1.6 cm from anterior to posterior. The specimen is inked for microscopic evaluation, with the anterior superior surface inked in blue, the anterior inferior surface inked in green, and the posterior surface inked in black. The specimen is serially sectioned from medial to lateral into ten slices. These are numbered 1-10, from medial to lateral. The specimen is grossly unremarkable on serially sectioning. The entire specimen is submitted as follows:

Cassette F1: Slice 1.  
Cassette F2: Slice 2.  
Cassette F3: Slice 3.  
Cassette F4: Slice 4.  
Cassette F5: Slice 5.  
Cassette F6: Slice 6.  
Cassette F7: Slice 7.  
Cassette F8: Slice 8.  
Cassette F9: Slice 9.  
Cassette F10: Slice 10.

/Pathology Resident

'Pathologist

Signed:

Fee Codes:

**Other Specimens**

Specimen Class: Status: Signed Out Accessioned:  
Signed Out:

Specimen(s) Received: A: Right chest wall tumor (fresh), B: Subclavian vein margin

**Final Diagnosis**

A. Right chest wall, tumor, excision: Metastatic high-grade neuroendocrine carcinoma, 7.5 cm; see comment.

B. Subclavian vein, margin, biopsy: Segment of vein with chronic inflammation, no tumor; see comment.

Specimen Class: Status: Signed Out Accessioned:  
Signed Out:

Specimen(s) Received:

**Final Diagnosis****Review of slides from**

**Right breast, upper outer quadrant, biopsy: Neuroendocrine carcinoma, large-cell type, high-grade; see comment.**

**Right anterior chest wall, fine-needle aspiration: Consistent with metastatic neuroendocrine carcinoma; see comment.**

Specimen Class: Status: Signed Out Accessioned:  
Signed Out:

Specimen(s) Received: A: Surgical scar right breast, B: New anterior superior margin right breast, C: New deep margin, D: New anterior inferior margin

**Final Diagnosis**

A. Skin, right breast surgical scar, excision: Scar with mild chronic inflammation and foreign body giant cell reaction, no tumor.

B. Right breast, new anterior superior margin, excision: Scar with chronic inflammation, foreign body reaction, and fat necrosis, no tumor.

C. Right breast, new deep margin, excision:

1. Scar with chronic inflammation, foreign body reaction, and fat necrosis, no tumor.
2. Microcalcifications associated with benign ducts.

D. Right breast, new anterior inferior margin, excision:

1. Scar with chronic inflammation, foreign body reaction, and fat necrosis, no tumor.
2. Microcalcifications associated with benign ducts.

