



Anonymous number:

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## FINAL DIAGNOSIS:

PART 1: LYMPH NODE, LEFT AXILLA SENTINEL NODE #1, BIOPSY –  
METASTATIC ADENOCARCINOMA INVOLVING ONE LYMPH NODE (1/1), UP TO 7 MM (1A), CONFIRMED BY  
AE1/AE3 CYTOKERATINE IMMUNOSTAINING ( (see comment).  
PART 2: LYMPH NODE, LEFT AXILLA, SENTINEL #2, BIOPSY –  
METASTATIC ADENOCARCINOMA INVOLVING ONE LYMPH NODE (1/1), UP TO 7 MM (2B), CONFIRMED BY  
AE1/AE3 CYTOKERATINE IMMUNOSTAINING ( (see comment).  
PART 3: LYMPH NODE, LEFT AXILLA, SENTINEL #3, BIOPSY –  
METASTATIC ADENOCARCINOMA INVOLVING ONE LYMPH NODE (1/1), UP TO 4 MM (3A), CONFIRMED BY  
AE1/AE3 CYTOKERATINE IMMUNOSTAINING ( (see comment).  
PART 4: LYMPH NODE, LEFT AXILLA, SENTINEL #4, BIOPSY –  
ONE LYMPH NODE, FREE OF TUMOR (0/1), (see comment).  
PART 5: BREAST, LEFT, TOTAL MASTECTOMY –  
A. INFIULTRATING LOBULAR CARCINOMA (5C, 5D, 5E, 5F, 5H, 5I, 5J, 5K, 5L, 5M, 5N, 5O, 5P, 5Q, 5R, 5S, 5T,  
5U,  
5V, and 5AA).  
B. THE TUMOR SIZE IS: 8.0 X 6.5 X 4.2 CM.  
C. NOTTINGHAM SCORE IS: 6/9 (TUBULES 3, NUCLEI 2, MITOSIS 1).  
D. LYMPHOVASCULAR INVASION IS NOT APPRECIATED (see comment).  
E. DUCTAL CARCINOMA IN-SITU, SOLID TYPE, NUCLEAR GRADE 2, WITH COMEDONECROSIS,  
REPRESENTING ABOUT 1 % OF TUMOR VOLUME.  
F. DUCTAL CARCINOMA IS PRESENT ADMIXED WITH INVASIVE TUMOR.  
G. MARGINS OF RESECTION ARE FREE OF TUMOR.  
H. NIPPLE, NO TUMOR IS SEEN.  
I. SKIN, FREE OF TUMOR.  
J. CHANGES CONSISTENT WITH PREVIOUS CORE BIOPSY SITE,  
K. LOBULAR CARCINOMA IN-SITU, CLASSIC TYPE WITH PAGETOID SPREAD INTO DUCTS (see comment).  
L. ATYPICAL LOBULAR HYPERPLASIA (see comment)).  
M. MULTIPLE MICROSCOPIC RADIAL SCARS WITH FLORID DUCTAL EPITHELIAL HYPERPLASIA AND  
XOLUNAR CELL CHANGES.  
N. INTRADUCTAL PAPILLOMA INVOLVED WITH INFILTRATING LOBULAR CARCINOMA.  
O. FIBROCYSTIC CHANGES WITH FIBROADENOMATOID NODULAR CHANGES.  
P. PSEUDOANGIOMATOUS STROMAL HYPERPLASIA (PASH).  
Q. IMMUNOHISTOCHEMICAL STAINING FOR ESTROGEN RECEPTOR, PROGESTERONE RECEPTOR AND  
HER-  
2/NEU WERE PREVIOUSLY PERFORMED ON AND WERE REPORTED AS FOLLOWS:  
ESTROGEN RECEPTOR – POSITIVE (H-SCORE 290), PROGESTERONE RECEPTOR – POSITIVE (H-SCORE  
200), AND HER-2/NEU – EQUIVOCAL (SCORE 2+). HER-2 FISH WAS NOT AMPLIFIED.

ICD-O-3  
Carcinoma, infiltrating lobular 8520/3  
Site @ Breast 150.9  
4/22/14

**Anonymous No.:**

**Age:** 68

**Gender:** F

**Race:** White

**CLINICAL HISTORY**

Procedure: Left total mastectomy, left sentinel lymph node biopsy, possible axillary lymph node dissection

Number of Lesions: 1

Site and Size Lesion 1: 9 cm, Histology: Invasive lobular carcinoma

Other Areas: Not provided

Neoadjuvant Therapy: No

Type of Neoadjuvant Therapy: N/A

Pretherapy Size: N/A

Clinical Findings Based On: MRI, ultrasound and mammogram

Comment: None listed

**ADDENDUM**

Tumor characteristics

Size: 8 cm

Nottingham score: 6

ER H-score: 290

PR H-score: 200

HER2 status: Negative

Ki-67 labeling index: 30

Based on above tumor characteristics, the estimated recurrence score using is reported below.

1 (includes a-f): 22.59

2 (includes a-e): 16.19

3 (includes c-f): 17.82

**NOTE**

For more scientific details, see reference: Klein ME et al. Mod Pathol. 2013;26:658-664. PMID: 23503643.

**ADDENDUM**

This infiltrating lobular carcinoma is heterogeneous and show microscopic foci of pleomorphic tumor component (infiltrating pleomorphic lobular component). This case is discussed with [REDACTED] at on

**FINAL DIAGNOSIS**

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METASTATIC ADENOCARCINOMA INVOLVING ONE LYMPH NODE (1/1), UP TO 7 MM (1A), CONFIRMED BY AE1/AE3 CYTOKERATINE IMMUNOSTAINING ( see comment).

PART 2: LYMPH NODE, LEFT AXILLA, SENTINEL #2, BIOPSY

METASTATIC ADENOCARCINOMA INVOLVING ONE LYMPH NODE (1/1), UP TO 7 MM (2B), CONFIRMED BY AE1/AE3 CYTOKERATINE IMMUNOSTAINING ( see comment).

PART 3: LYMPH NODE, LEFT AXILLA, SENTINEL #3, BIOPSY

METASTATIC ADENOCARCINOMA INVOLVING ONE LYMPH NODE (1/1), UP TO 4 MM

(3A), CONFIRMED BY AE1/AE3 CYTOKERATINE IMMUNOSTAINING ( (see comment).

PART 4: LYMPH NODE, LEFT AXILLA, SENTINEL #4, BIOPSY  
ONE LYMPH NODE, FREE OF TUMOR (0/1), (see comment).

PART 5: BREAST, LEFT, TOTAL MASTECTOMY

- A. INFILTRATING LOBULAR CARCINOMA (5C, 5D, 5E, 5F, 5H, 5I, 5J, 5K, 5L, 5M, 5N, 5O, 5P, 5Q, 5R, 5S, 5T, 5U, 5V, and 5AA).
- B. THE TUMOR SIZE IS: 8.0 X 6.5 X 4.2 CM.
- C. NOTTINGHAM SCORE IS: 6/9 (TUBULES 3, NUCLEI 2, MITOSIS 1).
- D. LYMPHOVASCULAR INVASION IS NOT APPRECIATED (see comment).
- E. DUCTAL CARCINOMA IN-SITU, SOLID TYPE, NUCLEAR GRADE 2, WITH COMEDONECROSIS, REPRESENTING ABOUT 1 % OF TUMOR VOLUME.
- F. DUCTAL CARCINOMA IS PRESENT ADMIXED WITH INVASIVE TUMOR.
- G. MARGINS OF RESECTION ARE FREE OF TUMOR.
- H. NIPPLE, NO TUMOR IS SEEN.
- I. SKIN, FREE OF TUMOR.
- J. CHANGES CONSISTENT WITH PREVIOUS CORE BIOPSY SITE, SEE PRIOR [REDACTED].
- K. LOBULAR CARCINOMA IN-SITU, CLASSIC TYPE WITH PAGETOID SPREAD INTO DUCTS (see comment).
- L. ATYPICAL LOBULAR HYPERPLASIA (see comment).
- M. MULTIPLE MICROSCOPIC RADIAL SCARS WITH FLORID DUCTAL EPITHELIAL HYPERPLASIA AND COLONAR CELL CHANGES.
- N. INTRADUCTAL PAPILLOMA INVOLVED WITH INFILTRATING LOBULAR CARCINOMA.
- O. FIBROCYSTIC CHANGES WITH FIBROADENOMATOID NODULAR CHANGES.
- P. PSEUDOANGIOMATOUS STROMAL HYPERPLASIA (PASH).
- Q. IMMUNOHISTOCHEMICAL STAINING FOR ESTROGEN RECEPTOR, PROGESTERONE RECEPTOR AND HER-2/NEU WERE PREVIOUSLY PERFORMED ON [REDACTED] AND WERE REPORTED AS FOLLOWS: ESTROGEN RECEPTOR POSITIVE (H-SCORE 290), PROGESTERONE RECEPTOR POSITIVE (H-SCORE 200), AND HER-2/NEU EQUIVOCAL (SCORE 2+). HER-2 FISH WAS NOT AMPLIFIED. [REDACTED]

#### **COMMENT**

Part # 1, # 2, # 3, # 4, and # 5: The results of immunohistochemical stainings support the above diagnosis (see microscopic description).

Parts #1, #2 and #3: The metastatic tumor cells within these lymph nodes are depicted by the AE1/AE3 cytokeratin immunostaining and are present circumferentially within the sub capsular sinusoidal area in minute tumor cell clusters and mostly as single cells. Re-review of the imprint slides performed at intraoperative consultation showed no metastatic tumor cells in part 1 and part 2, and showed rare atypical cells in part 3. [REDACTED]

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#### **GROSS DESCRIPTION**

The specimen is received fresh and in 5 parts.

Part 1 is received for intraoperative consultation labeled with the patient's name, initials [REDACTED] and "sentinel node biopsy #1 left axilla, not blue". It consists of a portion of adipose tissue which measures 2.5 x 1.5 x 1.2 cm. A single pink tan probable lymph node is identified measuring 1.5 x 1.1 x 0.8 cm. The lymph node is bisected for touch preparation to reveal a homogenous tan-yellow cut surface. The lymph node is further bisected longitudinally into 2-mm intervals and submitted entirely in two cassettes labeled

1A-1B.

Formalin Exposure Time: 13 hours

Part 2 is received for intraoperative consultation labeled with the patient's name, initials [REDACTED] and "sentinel node biopsy #2 left axilla not blue". It consists of a single fatty pink tan probable lymph node with minimal attached adipose tissue which measures 2 x 1.7 x 1 cm. The lymph node is bisected for touch preparation analysis to reveal a largely fatty replaced cut surface. The lymph node halves are further bisected into 2-mm longitudinal intervals and submitted entirely in two cassettes labeled 2A-2B.

Formalin Exposure Time: 13 hours

Part 3 is received for intraoperative consultation labeled with the patient's name, initials [REDACTED] and "sentinel node biopsy #3 left axilla not blue". It consists of a portion of adipose tissue which measures 4 x 3 x 1.5 cm. A single fatty pink tan probable lymph node is identified measuring 1.5 x 1 x 0.8 cm. The lymph node is bisected to reveal a largely fatty replaced cut surface. One half the lymph node is submitted for frozen section analysis. Both halves of the lymph node are further bisected into 2-mm longitudinal intervals and submitted entirely as follows:

3FS- lymph node half, frozen section

3A- remaining lymph node halves.

Formalin Exposure Time: 13 hours

Part 4 is labeled with the patient's name, initials [REDACTED] and "sentinel node biopsy #4 left axilla not blue". It consists of a portion of adipose tissue which measures 4.0 x 2.7 x 1.0 cm. A single pink tan probable lymph node is identified measuring 2.0 x 1.3 x 0.6 cm. The lymph node is bisected to reveal a pink-tan cut surface interspersed with adipose tissue. The lymph node halves are further sectioned into 2-mm longitudinal intervals and submitted entirely in two cassettes labeled 4A-4B.

Formalin Exposure Time: 13 hours

Part 5 is labeled with the patient's name, initials [REDACTED] and "left total mastectomy long lateral short superior". It consists of a 1202 g total mastectomy specimen which measures 23.5 x 22 x 7.5 cm. The anterior surface is remarkable for an ellipse shaped portion of light tan skin which measures 20 x 16 cm. The areola measures 6.5 x 6 cm with a 1.1-cm retracted, mobile nipple. No discrete skin scars or lesions are grossly identified. The specimen is inked and sectioned to reveal a large, ill-defined slightly stellate mass (ring-shaped biopsy clip) which is located roughly between the upper outer and lower outer quadrants, and extends towards the central aspect of the breast. The mass measures 8.0 x 6.5 x 4.2 cm and comes to within 1.0 cm of the closest posterior margin, 2.2 cm of the skin and 3 cm of the anterior inked margin. The breast parenchyma directly medial of the mass and encompassing a large portion of the upper inner and lower inner quadrants is dense and extensively fibrocystic (approximately 10 x 4.5 x 4 cm). No additional masses are identified grossly. The uninvolved breast parenchyma is composed of approximately 50% adipose tissue and 50% nodular fibrous tissue. Representative sections are submitted as follows:

5A- nipple and subareolar soft tissue

5B- breast parenchyma directly lateral of mass

5C- fullface mass (most lateral aspect)

5D-5K- fullface mass (central lateral aspect), 5D-5G= posterior aspect, 5E-5K= anterior aspect

5L-5S- fullface mass (central medial aspect), 5L-5O= posterior aspect, 5P-5S= anterior aspect

5T-5U- fullface mass (most medial aspect)

5V- breast parenchyma directly medial of mass

5W-5Y- fibrocystic tissue adjacent to the mass

5Z-5AA- posterior inked margin closest to mass  
 5AB- anterior inked margin closest to mass  
 5AC- lower outer quadrant  
 5AD- lower inner quadrant  
 5AE- upper inner quadrant  
 5AF- upper outer quadrant  
 Block 1- left breast tumor infiltrating lobular carcinoma.  
 Block 2- left breast normal fibrocystic changes.

Upper outer quadrant- green  
 Lower outer quadrant- red  
 Upper inner quadrant- black  
 Lower inner quadrant- blue  
 Anterior- orange.  
 Cold ischemic time: 28 minutes  
 Formalin exposure time: 12 hours 30 minutes

### **MICROSCOPIC DESCRIPTION**

Microscopic examination substantiates the above diagnosis.

The results of immunohistochemical staining are as follows for Part 1, 2, 3, and 4:

Antibody/Antigen	Result
AE1-AE3	Positive in the metastatic tumor cells in parts 1, 2 & 3, negative in 4.

The results of immunohistochemical staining are as follows for Part 5:

Antibody/Antigen	Result
E-Cadherin	Negative
P120	Positive cytoplasmic expression in lobular cells
D240	Highlights lymphatic spaces; no tumor cells within lymphatic spaces.
CD31	Highlights vascular c spaces; no tumor cells within vascular spaces.

Utilizing formalin-fixed (8-96 hour range), paraffin embedded tissue, immunohistology is performed with the following selected antibodies and designated antibody clone(s), directed against the following antigenic target(s), with adequate positive and negative internal and external controls. Antibodies are optimized appropriate for fixation times.

ANTIBODY	CLONE	TARGET ANTIGEN	VENDOR
AE1/AE3	AE1/AE3	carcinomas	
e-cadherin	36	Lobular Differentiation	
p120	98	Lobular Differentiation	
D2-D2-40	D2-40	Lymphatic Endothelium	
CD 31	JC70	endothelium	

### **INTRAOPERATIVE DIAGNOSIS**

1TP: LYMPH NODE, LEFT AXILLA, SENTINEL NODE BIOPSY #1, NOT BLUE (touch preparation)-  
 A. SUFFICIENT FOR ANCILLARY STUDIES  
 B. BENIGN  
 C. LYMPH NODE [REDACTED]

2TP: LYMPH NODE, LEFT AXILLA, SENTINEL NODE BIOPSY #2, NOT BLUE (touch preparation)-

- A. SUFFICIENT FOR ANCILLARY STUDIES
- B. BENIGN
- C. LYMPH NODE [REDACTED]

3FS/TP: LYMPH NODE, LEFT AXILLA, SENTINEL NODE BIOPSY #3, NOT BLUE (frozen section and touch preparation)-

- A. SUFFICIENT FOR ANCILLARY STUDIES
- B. DEFER
- C. LYMPH NODE WITH ATYPICAL CELLS [REDACTED]

Criteria	Yes	No
Diagnosis Discrepancy		
Primary Tumor Site Discrepancy		
HIPAA Discrepancy		
Prior Malignancy History		
Dual/Synchronous Primary		
Case is (circle):	QUALIFIED	DISQUALIFIED
Reviewer Initials		
Date Reviewed:	1/7/14	