Surgical Pathology Final Report

Temporary Copy

Case: [redacted] Patient: [redacted]
Collected: [redacted] ID: [redacted]
Ordered by: [redacted] Location: [redacted]

Diagnosis

A. SENTINEL LYMPH NODE, BIOPSY:
- METASTATIC CARCINOMA IN TWO OF FOUR LYMPH NODES (2/4).

B. LEFT BREAST, TOTAL MASTECTOMY:
- INVASIVE DUCTAL CARCINOMA, PRESENT AS TWO SEPARATE FOCI AT 12 AND 3 O'CLOCK, 3.5 AND 2.5 CM IN GREATEST DIEMENSION RESPECTIVELY.
- MARGINS OF RESECTION ARE FREE OF CARCINOMA.
- SEE SYNOPTIC REPORT.

C. LYMPH NODES, LEVEL 1 AND 2, LYMPHADENECTOMY:
- NO TUMOR SEEN IN EIGHT LYMPH NODES (0/8).
- SEE SPECIAL STAINS SECTION.

ICD-O-3
Carcinoma, infiltrating duct NOS 8500/3
① CLC
Site Breast, C50.9
② path Breast, middle C50.8
JW 2/24/14

(Electronic signature)
Verified:

Synoptic Report

SPECIMEN:
Total breast (including nipple and skin)
PROCEDURE:
Total mastectomy (including nipple and skin)
LYMPH NODE SAMPLING:
Axillary dissection (partial or complete dissection)
SPECIMEN INTEGRITY:
Single intact specimen (margins can be evaluated)
SPECIMEN SIZE:
Greatest dimension: 18 cm
Additional dimensions: 16 x 3 cm
SPECIMEN LATERALITY:
Left
TUMOR SITE: INVASIVE CARCINOMA:
Position: 12 o clock (, second mass at 3 o'clock)
TUMOR SIZE: SIZE OF LARGEST INVASIVE CARCINOMA:
Greatest dimension of largest focus of invasion over 0.1 cm: 3.5 cm
TUMOR FOCALITY:
Multiple foci of invasive carcinoma
Number of foci: 2
Sizes of individual foci: 3.5 and 2.5
MACROSCOPIC AND MICROSCOPIC EXTENT OF TUMOR:
Skin: Invasive carcinoma does not invade into the dermis or epidermis
Nipple: DCIS does not involve the nipple epidermis
DUCTAL CARCINOMA IN SITU (DCIS):
DCIS is present
Extensive intraductal component (EIC) negative
SIZE (EXTENT) OF DCIS:
Estimated size (extent) of DCIS (greatest dimension using gross and microscopic evaluation) is at least

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0.35 cm

ARCHITECTURAL PATTERNS:
Cribriform

NUCLEAR GRADE:
Grade II (intermediate)

NECROSIS:
Not identified

LOBULAR CARCINOMA IN SITU (LCIS):
Not identified

HISTOLOGIC TYPE OF INVASIVE CARCINOMA:
Invasive ductal carcinoma (no special type or not otherwise specified)

GLANDULAR (ACINAR)/TUBULAR DIFFERENTIATION:
Score 3: <10% of tumor area forming glandular/tubular structures

NUCLEAR PLEOMORPHISM:
Score 2: Cells larger than normal with open vesicular nuclei, visible nucleoli, and moderate variability in both size and shape

MITOTIC COUNT:
Score 3

OVERALL GRADE:
Grade 3: scores of 8 or 9

MARGINS:
Margins uninvolved by invasive carcinoma
Distance from closest margin: 5 mm (anterior)
Margins uninvolved by DCIS (if present)

LYMPH-VASCULAR INVASION:
Present

DERMAL LYMPH-VASCULAR INVASION:
Not identified

LYMPH NODES:
Number of sentinel lymph nodes examined: 4
Total number of lymph nodes examined (sentinel and nonsentinel): 12
Number of lymph nodes with macrometastases (>0.2 cm): 2
Number of lymph nodes with micrometastases (>0.2 mm to 0.2 cm and/or >200 cells): 0
Number of lymph nodes with isolated tumor cells (less than or equal to 0.2 mm and less than or equal to 200 cells): 0
Size of largest metastatic deposit: 1.1 cm

METHOD OF EVALUATION OF SENTINAL LYMPH NODES:
Hematoxylin and eosin (H&E), one level

PRIMARY TUMOR (INVASIVE CARCINOMA (pT):
pT2: Tumor >20 mm but less than or equal to 50 mm in greatest dimension

REGIONAL LYMPH NODES (pN):
pN1a: Metastases in 1 to 3 axillary lymph nodes, at least 1 metastasis greater than 2.0 mm

DISTANT METASTASIS (M):
Not applicable

ADDITIONAL PATHOLOGIC FINDINGS:
intraductal papillomas, proliferative fibrocystic changes.

MICROCALCIFICATIONS:
Present in non-neoplastic tissue

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Specimen Source

A Lymph Nodes, Sentinel
B Breast Biopsy, Left, Review of Margins
C Level 1 and 2 Axillary nodes

Clinical Information

Patient with multicentric left breast cancer, for mastectomy (12:00 and 3:00), marks lateral breast and lymph node biopsy
PRE-OP DIAGNOSIS: Left breast cancer
POST-OP DIAGNOSIS: Same
TYPE OF PROCEDURE: Lymph node biopsy, left mastectomy node dissection with immediate reconstruction with tissue expanders

Gross Description

The specimen is received in two parts.

A. The specimen is labeled "SENTINEL NODE" and is received unfixed for frozen section diagnosis. It consists of a fibrofatty pink-yellow tissue measuring 3.5 x 2.5 x 1.3 cm. On sectioning there are four lymph nodes ranging from 0.4-1.5 cm in maximum dimensions. The lymph nodes are entirely submitted in cassettes FS A1 one large lymph node bisected and one small lymph node, FS A2 one lymph node bisected, FS A3 one lymph node bisected

Time specimen was removed from the patient:
Time specimen was placed in formalin:
Ischemic time: 2 hours 9 minutes
Specimen left OR at
Front desk

B. The specimen is labeled "LEFT TOTAL MASTECTOMY" it is received unfixed (the specimen is in formalin for more than 6 hours and less than 48 hours). It consists of a 490 g left mastectomy with a suture designated lateral breast measuring 18 x 16 x 3 cm. The round skin ellipse measures 5.5 x 4.0 cm in maximum dimensions. The nipple is flat and an unremarkable measures 1.4 x 1.4 cm in maximum dimensions. The areolar is dark brown and unremarkable. The fascia is smooth and glistening. The anterior margin is inked red and the deep posterior margin of resection is inked black. On sectioning, there is an ill-defined cavitated mass surrounded by firm fibrous pink-yellow tissue measuring 3.5 x 2.5 x 2.5 cm. The mass is at 12:00, approximately 5 cm from the nipple, 0.5 cm from the anterior margin and 3.5 cm from the posterior margin. On further sectioning there is a second lobulated firm pink yellow mass measuring 2.5 x 2.0 x 1.2 cm., this mass is at 3:00, approximately 7 cm from the first mass at 12:00, 5 cm from the nipple, 0.6 cm from the anterior margin and 2.3 cm from the deep posterior margin mass. The surrounding breast parenchyma is nodular and shows an area of hemorrhage previously inked blue. Representative sections are submitted.

Section Key:

B1 - nipple and skin
B2 - anterior margin and deep posterior margin corresponding to 12:00 mass
B3 - B4 random sections of mass corresponding to 12:00
B5 - anterior margin and deep posterior margin corresponding to 3:00 mass
B6 - B7 random sections of mass corresponding to 3:00

B8 - random sections of nodular fibrous tissue surrounding the 12:00 mass
B9 - random sections of nodule fibrous tissue surrounding the 3:00 mass
B10 - upper inner quadrant
B11 - lower inner quadrant
B12 - upper outer quadrant
B13 - lower outer quadrant

Time specimen was removed from the patient:
Time specimen was placed in formalin:
Ischemic time: 40 minutes

C. The specimen is labeled "LEVEL I AND II AXILLARY NODES" and is received unfixed. It consists of a nodular fatty yellow-pink tissue measuring 8 x 7.2 x 1.6 cm. On sectioning, there are eight fatty lymph nodes ranging from 0.5-2.5 cm in maximum dimensions. The lymph nodes are entirely submitted.

Section Key:

C1 - C2 largest lymph node bisected
C3 - one lymph node bisected
C4 - one lymph node bisected
C5 - one lymph node bisected
C6 - two lymph nodes
C7 - two lymph nodes

Time specimen was removed from the patient:
Time specimen was placed in formalin:
Ischemic time: 3 hours 30 minutes

Dictated by:

Special Stains / Slides

Immunohistochemical studies were performed on formalin fixed, paraffin-embedded tissue (Block C6) with adequate positive and negative control sections.
Cytokeratins AE1/AE3 fail to reveal metastatic carcinoma.

IMMUNOHISTOCHEMICAL EVALUATION OF ESTROGEN RECEPTORS, PROGESTERONE RECEPTORS, AND HER-2NEU IN INVASIVE MAMMARY CARCINOMA, FOCUS AT 12 O'CLOCK (BLOCK B4):

ESTROGEN RECEPTORS: 60 %, POSITIVE, STAINING INTENSITY: WEAK TO MODERATE.
PROGESTERONE RECEPTORS: 0 %, NEGATIVE.

HER-2NEU: SCORE 1+, NEGATIVE.

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IMMUNOHISTOCHEMICAL EVALUATION OF ESTROGEN RECEPTORS, PROGESTERONE RECEPTORS, AND HER-2NEU IN INVASIVE MAMMARY CARCINOMA, FOCUS AT 3 O'CLOCK(BLOCK B7):

ESTROGEN RECEPTORS: 90 %, POSITIVE, STAINING INTENSITY: MODERATE.
PROGESTERONE RECEPTORS: 2 %, POSITIVE, STAINING INTENSITY: WEAK

HER-2NEU: SCORE 2+, EQUIVOCAL.

Immunohistochemical studies were performed on formalin fixed paraffin embedded tissue (Blocks B4 and B7) using the following monoclonal antibodies: Estrogen receptor (Clone SP1), Progesterone receptor (Clone 1E2) and Her-2neu (Clone 4B5); control sections for HER-2Neu are provided within a kit (score 0 MCF-7, score 1+ T-47D, score 2+ MDA-MB-453, score 3+ BT-474). Detection system used: polymer. Primary antibodies, reagents and control sections for HER-2neu are all provided by

All controls show appropriate reactivity.

Reactivity of Estrogen and Progesterone receptors is determined based on the percentage of positively stained nuclei of tumor cells. Reference values (CAP accreditation program checklist 2010 and guidelines on webpage):
Positive: nuclear staining in 1% or greater than 1% of invasive carcinoma cells
Negative : nuclear staining in less than 1% of invasive carcinoma cells
Staining intensity: is reported as weak, moderate or strong.

HER-2neu reactivity is reported applying the CAP scoring guidelines (CAP accreditation program checklist 2010 and guidelines on webpage):
Score 0 = Negative: No immunoreactivity, or faint weak immunoreactivity in <10% of tumor cells but only a portion of the membrane is positive..
Score 1 = Negative: Faint weak immunoreactivity in 10% or >10% of tumor cells but only a portion of the membrane is positive.
Score 2+ = Equivocal: Weak to moderate complete membrane immunoreactivity in >10% of tumor cells or circumferential intense membrane staining in <30% of cells.
Score 3+ = Positive: More than 30% of the tumor cells must show circumferential intense and uniform membrane staining. A homogeneous (chicken wire) pattern should be present.

Equivocal results for HER-2neu (Score 2+) will be subsequently followed by a reflex dual-color ISH testing.

The performance characteristics of these antibodies were determined by the . They have not been cleared or approved by the U.S. Food and Drug Administration. The FDA has determined that such clearance or approval is not necessary. These tests are used for clinical purposes. They should not be regarded as investigational or for research. This laboratory is certified under the Clinical Laboratory Improvement Amendments of 1988 (CLIA-88) as qualified to perform high-complexity clinical laboratory testing.

6 FS, 23 H&E, 7 IHC
Tissue Code

Addendum Report
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Case: [redacted] Patient: [redacted]
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Ordered by: Location:

Addendum Report

ASSAY PERFORMED: HER2 GENE AMPLIFICATION BY DUAL IN SITU HYBRIDIZATION USING THE INFORM HER2 Dual ISH DNA PROBE COCKTAIL

Number of nuclei scored:	20
Total HER2 signals:	42
Total CHR 17 signals:	33
HER2/CHR 17 ratio:	1.3

INTERPRETATION: -/NEGATIVE FOR HER2 GENE AMPLIFICATION.

NOTE: THE ASSAY WAS PERFORMED AS A REFLEX TEST AFTER THE HER2/NEU IMMUNOSTAIN WAS 2+.

SPECIMEN TYPE: The HER2 Dual ISH DNA is performed on a formalin-fixed paraffin-embedded tissue slide from block B7.

DESCRIPTION OF THE ASSAY: The HER2 Dual ISH DNA Probe assay enables the HER2 gene and Chr17 centromere to be co-hybridized and visualized via light microscopy on the same slide. Specifically for this assay, HER2 is detected by a dinitrophenyl (DNP) labeled probe visualized utilizing SISH DNP (silver in situ hybridization) detection kit. The Chr17 centromere is targeted with a digoxigenin (DIG) labeled probe and detected using Red ISH DIG detection kit. Dual ISH staining results in visualization by light microscopy and which HER2 appears as discrete black signals (SISH) and Chr17 as red signals in nuclei of normal cells serving as internal positive control for staining) as well as in carcinoma cells.

SLIDE SCORING: Once an adequate target area is identified the reader records the scores for HER2 and Chr17 copy numbers that are present in 20 representative nuclei. If the resulting HER2 / Chr17 ratio falls within 1.8-2.2 (EQUIVOCAL) the reader is recommended to score an additional 20 nuclei and the resulting ratio is calculated from the total 40 nuclei. HER2 gene status is reported as non-amplified (HER2/ Chr17 < 2.0) or amplified (HER2/Chr17 ≥ 2.0).

The performance characteristics of this assay were determined by the This assay has been approved by the U.S. Food and Drug Administration. This laboratory is certified under the Clinical Laboratory Improvement Amendments of 1988 (CLIA-88) as qualified to perform high-complexity clinical laboratory testing.

cpt: 88368 x2

(Electronic signature)
Verified:

Criteria: [redacted] 12/11/13	Yes	No
Diagnosis Discrepancy		✓
Primary Tumor Site Discrepancy		✓
HIPAA Discrepancy		✓
Prior Malignancy History		✓
Dual/Synchronous Primary Noted		✓
Case is (circle): QUALIFIED / DISQUALIFIED		
Reviewer Initials [redacted] Date Reviewed: 12/12/13		