Carcinoma, infiltrating, duct, NOS 8500/3

Path Site Code: breast, upper inner quadrant C50.2 12/29/10 jw

CQCF Site: breast, NOS C50.9

TSS:

SPECIMENS:

A. SENTINEL NODE #1 RIGHT AXILLA
B. RIGHT BREAST
C. AXILLARY CONTENT
D. LEFT BREAST REDUCTION

SPECIMEN(S):

A. SENTINEL NODE #1 RIGHT AXILLA
B. RIGHT BREAST
C. AXILLARY CONTENT
D. LEFT BREAST REDUCTION

INTRAOPERATIVE CONSULTATION DIAGNOSIS:

TPA, FSA: Sentinel lymph node #1 right axilla: Smears (touch imprint)-Negative for tumor cells, (frozen section)-Positive for carcinoma.
By Dr, called to Dr. at

GROSS DESCRIPTION:

A. SENTINEL LYMPH NODE #1, RIGHT AXILLA
Received fresh and labeled "sentinel node #1 right axilla" is a 2.8x1.0x1.2cm lymph node. There is blue dye staining present. The specimen is sectioned and a touch prep is performed. A portion of the lymph node is submitted for frozen section. The lymph node is submitted in toto as follows:

FSA1: frozen section of portion of lymph node
A2-A4: remainder of lymph node

B. RIGHT BREAST,MASTECTOMY:
Received is a 1,321gm right mastectomy specimen measuring 23x23x5.8cm. Margin of specimen oriented with a stich indicating the lateral margin . In the medial portion of the specimen is an ellipse of tan skin measuring 6.7cm in length with a diameter of 3.1cm. Eccentrically located on the skin is a healed scar measuring 5.5cm in length. The areola is present and measures 4.0cm in length with a width of 3.0cm. The nipple is everted and is 1.0cm. The axillary tail is 6.5x5.0x1.5cm. The anterior surface of the specimen is inked blue, the posterior surface is inked black and the specimen is serially sectioned. In the upper inner quadrant is a well circumscribed white-tan mass measuring 3.8x3.2x2.9cm which is located 0.5 cm from the nearest deep margin. The central portion of the mass shows areas of hemorrhage and possible necrosis. 4.6cm lateral from the mass, located approximately 2.0cm from the areola region, is a hemorrhagic white-tan firm mass measuring 2.5x2.0x1.8cm. It is located 2.5cm from the deep margin. The remainder of the specimen consists of primarily adipose tissue. A few possible lymph nodes are found within the axillary tail. Multiple sections are submitted and labelled as follows: follows:

B1-10:sections from the larger tumor (medial)
B11-14: sections from the smaller tumor near nipple area.
B15-16 – sections from upper inner quadrant
B17-18: sections from upper outer quadrant
B19-20: sections from lower outer quadrant.
B21-22: sections from lower inner quadrant
B23- 24 sections from nipple and areolar area.
B25-B26: possible lymph nodes

C. AXILLARY CONTENTS
Received in formalin and labeled "axillary contents levels 1&2" is a piece of adipose tissue, 7.3 x 5.6 x 0.9 cm. Multiple lymph nodes are found, ranging in size from 0.1 to 2.8cm. Lymph nodes are submitted in toto as follows:

C1: 5 possible lymph nodes
C2-C6: 4 possible lymph nodes, each
C7: 2 possible lymph nodes
C8: 3 possible lymph nodes
C9-C10: 1 bisected lymph node, each
C11-C13: 1 lymph node each

D. LEFT BREAST REDUCTION:
Received in formalin and labeled ", Left Breast Reduction mammoplasty". The specimen consists of primarily adipose tissue, little fibrous breast tissue is found. No masses or lesions are seen. Representative sections are submitted as follows: D1 skin and subjacent adipose tissue, D2-D3 fibrous tissue.

DIAGNOSIS:

A. SENTINEL NODE #1, RIGHT AXILLA:
- METASTATIC CARCINOMA TO ONE OUT OF ONE LYMPH NODE, CONSISTENT WITH METASTASIS FROM PRIMARY BREAST CARCINOMA.
(1/1) see note.

B. RIGHT BREAST, MASTECTOMY SPECIMEN:
- INVASIVE DUCTAL CARCINOMA, SBR GRADE II WITH GEOGRAPHIC AREAS OF NECROSIS, MULTICENTRIC.

- SIZE OF TUMOR: MEDIAL ASPECT OF BREAST-3.8 x 3.2 x 2.9 CM.
- CENTRAL AREA - SIZE OF TUMOR-2.5 x 2.0 x 1.8 CM.
- MARGINS OF RESECTION-NEGATIVE FOR TUMOR.
- FOCAL COLUMNAR CELL CHANGE.
- TWO AXILLARY LYMPH NODES-NEGATIVE FOR TUMOR (0/2).

C. AXILLARY CONTENTS, RESECTION:
- THIRTY-FIVE AXILLARY LYMPH NODES-NEGATIVE FOR TUMOR (0/35).

D. LEFT BREAST REDUCTION:
- BREAST TISSUE WITH INCLUDED SKIN TISSUE-NO SPECIFIC PATHOLOGIC CHANGES-NEGATIVE FOR TUMOR.

NOTE: In specimen A,(A1) size of lymph node measured 2.8x1.0x1.2cm and metastatic tumor only seen on the portion of lymphnode submitted for frozen and permanent section in an area measuring 5.0x2.5mm. The remainder of the lymph node submitted as A2-A4 are negative for metastatic tumor.

SYNOPTIC REPORT - BREAST
Specimens Involved
Specimens: A: SENTINEL NODE #1 RIGHT AXILLA
B: RIGHT BREAST
C: AXILLARY CONTENT
D: LEFT BREAST REDUCTION

Specimen Type: Mastectomy
Needle Localization: No
Laterality: Right
Invasive tumor: Present
Multifocality: Yes
WHO CLASSIFICATION
Invasive ductal carcinoma, NOS 8500/3
Specimen size: Size of Invasive focus 3.8cm
Additional dimensions: 3.2cm x 2.9cm
Tumor Site: Upper inner quadrant
Central
Margins: Negative
Distance from closest margin: 0.5cm
Margin: deep
Tubular score: 3 (<10% tubule)
Nuclear grade: 3
Mitotic score (Olympus 40x): 3 (>13/10 hpf)
Modified Scarff Bloom Richardson Grade: III (8-9 points)
Necrosis: Present
Vascular/Lymphatic Invasion: None identified
Lobular neoplasia: None
Lymph nodes: Sentinel lymph node and axillary dissection
Lymph node status: Positive 1 / 38
Micrometastases: No
DCIS PRESENT?
No
Pathological staging (pTN): pT 2 N 1

CLINICAL HISTORY:
year old with right breast ca

PRE-OPERATIVE DIAGNOSIS:
Right breast ca

ADDENDUM:
BREAST ER/PR -1
SPECIMEN
Type: Other
Mastectomy
Block Number: B9
HORMONE RECEPTOR STATUS
Laboratory:
Estrogen Receptor: Negative
Allred Score: 0 = Proportion Score 0 + Intensity Score 0

Progesterone Receptor: Negative
Allred Score: 0 = Proportion Score 0 + Intensity Score 0
The Allred score for estrogen and progesterone receptors is calculated by adding the sum of the proportion score (0 = no staining, 1 = <1% of cells staining, 2 = 1 - 10% of cells staining, 3 = 11-30% of cells staining, 4 = 31-60% of cells staining, 5 = >60% of cells staining) to the intensity score (1 = weak intensity of staining, 2 = intermediate intensity of staining, 3 = strong intensity of staining), with a scoring range from 0 to 8.
ER/PR positive is defined as an Allred score of >2 and ER/PR negative is defined as an Allred score of less than or equal to 2.
Methodology: Fixation Type and Length: Tissue was fixed in 10% neutral buffered formalin
CT) for no less than 8 and no longer than 24 hours. Antibody and Assay Methodology: Mouse anti-human ER and PR,
Comment: This assay can be used to select invasive breast cancer patients for hormone therapy (1).
ER and PR analysis was performed on this case by immunohistochemistry utilizing the ER (ER 1D5, 1:100) and PR (PGR 136, 1:100) antibody provided by , following the manufacturer's instructions listed in the package insert. This assay was not modified, and adherence to all instruction and guidelines were strictly followed. Interpretation of the ER/PR immunohistochemical staining characteristics is guided by published results in the medical literature (1), information provided by the reagent manufacturer and by internal review of staining performance within Pathology Department.
1. Harvey JM, et al. Estrogen receptor status by immunohistochemistry is superior to the ligand-binding assay for predicting response to adjuvant endocrine therapy in breast cancer. J Clin Oncol. 17:1474-1481, 1999

SYNOPTIC REPORT - BREAST HER-2 RESULTS
Specimens Involved
Specimens: B: RIGHT BREAST

HER2 Status Results, Immunohistochemistry Evaluation
SPECIMEN
Surgical Excision
Block Number: Block
B9
Interpretation: Negative
Intensity: 0
% Tumor Staining: 0%
FISH Ordered NO
METHODOLOGY
Methodology: Fixation Type and Length: Tissue was fixed in 10% neutral buffered formalin
for no less than 8 and no longer than 24 hours. Antibody and Assay Methodology: Rabbit anti-human HER2, HerceptestTM (FDA-approved test kit), ( ). Control Slides Examined: External kit-slides provided by manufacturer (cell lines with high, low and negative HER2 protein expression), and in-house known HER2 amplified control tissue were evaluated along with the test tissue. These control slides run along side of this patient's sample showed appropriate staining. Adequacy of Specimen: Adequate, well preserved, clear-cut invasive carcinoma identified for HER2 evaluation.
Scoring Criterion and Scoring System:
IHC Level of Expression(Score) /Tumor Cell Membrane Staining Pattern
Negative (0)/Absence of Staining
Negative (1+)/Faint Incomplete membrane Staining, >10% of Cells
Equivocal (2+)/Weak complete membrane Staining, >10% of Cells
Positive (3+)/Strong complete membrane Staining, >10% of Cells
Equivocal Category for HER2 IHC results: A HER2, 2+ staining result that is interpreted as equivocal may not indicate gene amplification. A FISH test for HER2 gene amplification will be ordered for all HER2 IHC 2+ results.
COMMENT
This assay can be used to select invasive breast cancer patients for Trastuzumab (Hereptin) therapy (1,2). Clinical Trials have shown that Trastuzumab substantially increases the likelihood for an objective response and overall survival for patients with metastatic HER2-positive breast cancer, regardless of whether HER2 tumor status was determined as IHC 3+ or FISH positive. Trastuzumab added to adjuvant chemotherapy substantially increase disease-free survival and decreases the risk of disease recurrence by about 50% for patients with early-stage HER2 protein over-expressed or gene amplified invasive breast cancer (3).
HER2 analysis was performed on this case by immunohistochemistry utilizing the FDA approved Dako HercepTest (TM) test kit following the manufacturer's instructions listed in the package insert. This assay was not modified, and adherence to all instruction and guidelines were strictly followed. Interpretation of the HER2 immunohistochemical staining characteristics is guided by published results in the medical literature (4), information provided by the reagent manufacturer and by internal review of staining performance within the Pathology Department.
HER2 TEST VALIDATION
This HER2 immunohistochemical assay has been validated according to the recently revised recommendations and guidelines from the NCCN HER2 testing in Breast Cancer Task Force, and the jointly issued recommendations and guidelines from ASCO and the CAP (5). 80 randomly selected breast cancer samples were tested for HER2 by IHC as outline above and interpreted as, negative (score 0/1+) equivocal (score 2+) and positive (score 3+) without knowledge of the previous reported results.

These cases were also blindly read using two different FISH assay as amplified or non-amplified and the HER2/CEP17 ratios were recorded. After analyzing these results, there was 100% concordance between the IHC

and FISH results for cases that were interpreted as either positive or negative by IHC. 9 of the 80 cases were interpreted as equivocal by IHC and of these 3/9 (33%) were non-amplified by FISH and 6/9 (66%) were found to be amplified.

The Pathology Department Immunohistochemistry laboratory takes full responsibility for this tests performance and has programs in place to regularly monitor the proficiency and the interpretation of HER2 assays. The laboratory also participates in external quality assurance HER2 programs including the CAP proficiency testing program.

REFERENCE

1. Carlson RW, Anderson BO, Burstein HJ, et al., NCCN breast cancer clinical practice guidelines in oncology. J Natl Compr Canc Netw. 2005;3:238-289.
2. Carlson RW, Brown E, Burstein HJ, et al., NCCN Task Force Report: adjuvant therapy for breast cancer. J Natl Compr Canc Netw. 2006;4:S1-S26.
3. Romond EH, Perez EA, Bryant J, et al. Trastuzumab plus adjuvant chemotherapy for operable HER2-positive breast cancer. N Eng J Med 2005;353(16):1673-84
4. Leong ASY, Formby M, Haffajee Z, et al. *Refinement of immunohistologic parameters for Her2/neu scoring* validation by FISH and CISH. Appl Immunohistochem Mol Morphol. 2006;14:384-389.
5. Wolff AC, Hammond EH, Schwartz JN, et al., American Society of Clinical Oncology/College of American Pathologists Guideline Recommendations for Human Epidermal Growth Factor Recepto 2 Testing in Breast Cancer. Arch of Path and Lab Med 2007; 131:18-43.

Immunostain results done on the smaller second tumor (section B11) are as follows:

ER: Negative (0%)
PR: Negative (0%)

SYNOPTIC REPORT - BREAST HER-2 RESULTS
HER2 Status Results, Immunohistochemistry Evaluation
SPECIMEN
Surgical Excision
Block Number: Block
B1
Interpretation: Equivocal
Intensity: 2+
% Tumor Staining: 20%
FISH Ordered YES DATE
METHODOLOGY
Methodology: Fixation Type and Length: Tissue was fixed in 10% neutral buffered formalin d, for no less than 8 and no longer than 24 hours. Antibody and Assay Methodology: Rabbit anti-human HER2, HerceptestTM (FDA-approved test kit), Control Slides Examined: External kit-slides provided by manufacturer (cell lines with high, low and negative HER2 protein expression), and in-house known HER2 amplified control tissue were evaluated along with the test tissue. These control slides run along side of this patient's sample showed appropriate staining. Adequacy of Specimen: Adequate, well preserved, clear-cut invasive carcinoma identified for HER2 evaluation.
Scoring Criterion and Scoring System:
IHC Level of Expression(Score) /Tumor Cell Membrane Staining Pattern
Negative (0)/Absence of Staining
Negative (1+)/Faint Incomplete membrane Staining, >10% of Cells
Equivocal (2+)/Weak complete membrane Staining, >10% of Cells
Positive (3+)/Strong complete membrane Staining, >10% of Cells
Equivocal Category for HER2 IHC results: A HER2, 2+ staining result that is interpreted as equivocal may not indicate gene amplification. A FISH test for HER2 gene amplification will be ordered for all HER2 IHC 2+ results.
COMMENT
This assay can be used to select invasive breast cancer patients for Trastuzumab (Hereptin) therapy (1,2). Clinical Trials have shown that Trastuzumab substantially increases the likelihood for an objective response and overall survival for patients with metastatic HER2-positive breast cancer, regardless of whether HER2 tumor status was determined as IHC 3+ or FISH positive. Trastuzumab added to adjuvant chemotherapy substantially increase disease-free survival and decreases the risk of disease recurrence by about 50% for patients with early-stage HER2 protein over-expressed or gene amplified invasive breast cancer (3).
HER2 analysis was performed on this case by immunohistochemistry utilizing the FDA approved Dako HercepTest (TM) test kit following the manufacturer's instructions listed in the package insert. This assay was not modified, and adherence to all instruction and guidelines were strictly followed. Interpretation of the HER2 immunohistochemical staining characteristics is guided by published results in the medical literature (4), information provided by the reagent manufacturer and by internal review of staining performance within the Pathology Department.
HER2 TEST VALIDATION
This HER2 immunohistochemical assay has been validated according to the recently revised recommendations and guidelines from the NCCN HER2 testing in Breast Cancer Task Force, and the jointly issued recommendations and guidelines from ASCO and the CAP (5). 80 randomly selected breast cancer samples were tested for HER2 by IHC as outline above and interpreted as, negative (score 0/1+) equivocal (score 2+) and positive (score 3+) without knowledge of the previous reported results.

These cases were also blindly read using two different FISH assay as amplified or non-amplified and the HER2/CEP17 ratios were recorded. After analyzing these results, there was 100% concordance between the IHC and FISH results for cases that were interpreted as either positive or negative by IHC. 9 of the 80 cases were interpreted as equivocal by IHC and of these 3/9 (33%) were non-amplified by FISH and 6/9 (66%) were found to be amplified.

The Pathology Department Immunohistochemistry laboratory takes full responsibility for this tests performance and has programs in place to regularly monitor the proficiency and the interpretation of HER2 assays. The laboratory also participates in external quality assurance HER2 programs including the CAP proficiency testing program.

REFERENCE

1. Carlson RW, Anderson BO, Burstein HJ, et al., NCCN breast cancer clinical practice guidelines in oncology. J Natl Compr Canc Netw. 2005;3:238-289.
2. Carlson RW, Brown E, Burstein HJ, et al., NCCN Task Force Report: adjuvant therapy for breast cancer. J Natl Compr Canc Netw. 2006;4:S1-S26.
3. Romond EH, Perez EA, Bryant J, et al. Trastuzumab plus adjuvant chemotherapy for operable HER2-positive breast cancer. N Eng J Med 2005;353(16):1673-84
4. Leong ASY, Formby M, Haffajee Z, et al. Refinement of immunohistologic parameters for Her2/neu scoring validation by FISH and CISH. Appl Immunohistochem Mol Morphol. 2006;14:384-389.
5. Wolff AC, Hammond EH, Schwartz JN, et al., American Society of Clinical Oncology/College of American Pathologists Guideline Recommendations for Human Epidermal Growth Factor Recepto 2 Testing in Breast Cancer. Arch of Path and Lab Med 2007; 131:18-43.

Gross Dictation:
Microscopic/Diagnostic Dictation: Pathologist,
Final Review: Pathologist,
Microscopic/Diagnostic Dictation: Pathologist,
Microscopic/Diagnostic Dictation: Pathologist,
Final Review: Pathologist,
Final: Pathologist,
Addendum: Pathologist,
Addendum Review: Pathologist,
Addendum Final: Pathologist,
Addendum: PATHOLOGIST,
Addendum Review: PATHOLOGIST
Addendum Final: PATHOLOGIST.
Addendum: Pathologist
Addendum Review: Pathologist.
Addendum Final: Pathologist,
Addendum: PATHOLOGIST,
Addendum Review: PATHOLOGIST,
Addendum Final: PATHOLOGIST,

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