ICD-O-3
Carcinoma, infiltrating duct, NOS | 4935
8500/3

Site: Breast
C50.9

Collection Date:
Hospital of Origin
Copy to

QC Pathologist:

FINAL PATHOLOGIC DIAGNOSIS:
A. Left axillary sentinel lymph node:
One lymph node containing metastatic carcinoma.
Confirms frozen section diagnosis.
Size of involvement within the node: 0.3 cm.
B. Left breast mastectomy:
Residual invasive ductal carcinoma.
Size: 2.5 cm.
Architectural score: 2/3.
Nuclear score: 2/3.
Mitotic score: 1/3.
Total score: 5/9, Grade I.
Carcinoma is adjacent to previous biopsy cavity.
No evidence of skin or nipple involvement.
Deep margin of excision is free of carcinoma.
Prognostic panel was performed on the original biopsy and will not be repeated unless requested.
Multifocal areas of ductal carcinoma in situ present in uninvolved quadrants of breast.
DCIS is high-grade comedo carcinoma type.
Largest area of confluent DCIS is approximately 1.0 cm.
TNM Classification: T2 pN1 MX.

COMMENTS:

CLINICAL HISTORY:
Preoperative Diagnosis: Left modified radical mastectomy with sentinel node mapping with frozen section. Invasive ductal carcinoma, ER positive, PR positive, Ki-67 (MIB1) 33%.
Postoperative Diagnosis:
Symptoms/Radiologic Findings:
SPECIMENS:
A. Left axilla sentinel node with frozen section
B. Left breast

CODES:

UUID:926E93B6-EF7C-4F13-824D-13D08B7F7938
TCGA-AC-A23C-01A-PR
Redacted

Criteria	Yes	No
Diagnosis Discrepancy		X
Primary Tumor Site Discrepancy		X
HIPAA Discrepancy		X
Prior Malignancy History		X
Dual/Synchronous Primary Noted		X
Case is (circle):	QUALIFIED	DISQUALIFIED
Reviewed Initials:	Date Reviewed:	4/19/11

P1

PROCEDURAL DEMOGRAPHICS:
Date of Procedure:
Accession Date/Time:

GROSS DESCRIPTION:
The specimen is received in two containers labeled

A. Additionally labeled right sentinel node and contains a 1.7 cm yellow tan fibrofatty soft tissue. The specimen is bisected and entirely submitted for frozen section with the residual entirely resubmitted for permanent section in cassette A labeled
B. Additionally labeled left breast and contains a 641 gram, 20.0 x 13.5 x 7.0 cm simple mastectomy specimen partially surfaced by a 17.5 x 9.3 cm ellipse of pink tan wrinkled skin bearing a central 1.4 x 1.2 x 0.5 cm everted nipple. No orientation is offered or possible. The deep margin is inked and the specimen is serially sectioned to reveal a 2.5 x 1.5 x 1.5 cm ill defined gray white gritty mass that resides 3.5 cm from the skin surface and approaches to within 3.5 cm of the inked deep margin. Located immediately adjacent to this mass is a 3.5 x 2.8 x 2.3 cm shaggy, necrotic cavity consistent with previous biopsy site. This cavity resides 1.5 cm below the skin surface and approaches to within 3.5 cm of the inked deep margin. The remainder of the cut surface is comprised of predominantly yellow tan adipose tissue admixed with moderate amounts of interspersed gray white fibrous tissue. No additional masses are identified.
Also received in the same container is an 11.5 x 2.0 x 1.5 cm strip of pink tan wrinkled skin with adherent yellow tan fibrofatty soft tissue. Sectioning reveals a yellow tan fibrofatty cut surface with no discrete lesions.
Representative sections are submitted in cassettes B1-B13 labeled designated as follows: B1-- nipple; B2-- inked deep margin, perpendicular; B3-B5-- mass; B6-B9-- previous biopsy cavity; B10-B12-- representative sections from the three uninvolved quadrants; B13-- sections from separately submitted skin and fibroadipose tissue.
Additionally, a yellow and green cassette are submitted for genomic research each labeled

INTRA-PROCEDURE CONSULTATION:
A. Frozen section diagnosis: Metastatic neoplasm approximately 0.3 mm on frozen section per Dr.

margin. The specimen is inked as follows: Superficial - blue, deep - black, superior - green, and inferior - orange. The specimen is serially sectioned in a medial to lateral fashion to reveal a 0.9 x 0.8 x 0.6 cm white-tan, firm, well-defined mass/possible lymph node which extends to the medial, superior, inferior, superficial margins, is within 0.7 cm of the deep margin and greater then 1 cm from the lateral margin. The mass is covered in a moderate amount of overlying blue surgical dye. Remaining breast parenchyma is approximately 10% tan, somewhat dense fibrous tissue. Cut surfaces are also remarkable for a few foci of hemorrhage up to 0.8 cm in greatest dimension. The entire specimen is submitted in cassettes labeled as follows: A1-A7 are in a medial to lateral fashion. A1 is a full cross section of the mass to show the nearest superficial, deep, superior, inferior margins; A2. Additional section of the mass; A3-A7. Remaining full cross sections of the specimen; A8. Medial margin and transverse sections; A9. Lateral margin and transverse sections.
B. Additionally labeled "2 - Left medial margin, old margin up, new margin down" and consists of a 1.9 x 1.4 x 0.8 cm portion of yellow-tan, lobulated, fibrofatty breast tissue, stitched to a Telfa pad to indicate that the new margin is face down; new margin is inked blue. Sectioning reveals tan-yellow, lobulated, fibrofatty and friable cut surfaces. No significant fibrous tissue or distinct nodular lesions are identified. The entire specimen is submitted sequentially in cassettes B1 and B2 labeled

INTRA-PROCEDURE CONSULTATION:

MICROSCOPIC DESCRIPTION:
THERAPEUTIC MARKERS
Test
Description

Breast Cancer Analysis using Immuno-histochemistry, , and Pathologist review.
is a FDA approved adjunctive, computer-assisted and interactive microscopy system which aids the pathologist in the detection, classification, and counting of cells of interest thereby standardizing slide scoring through quantitative assessment of marker intensity, size and shape.
Estrogen / Progesterone Receptors ER/PR
ER = Rabbit Monoclonal Antibody (clone SP1)
PR = Rabbit Monoclonal Antibody (Clone 1E2)
Anti-Estrogen receptor (ER) primary antibody is a rabbit monoclonal antibody (IgG) that is used for the qualitative detection of estrogen receptor antigens in sections of formalin-fixed, paraffin-embedded tissue on an automated slide stainer platform used in conjunction with an indirect biotin streptavidin detection system. The ER antibody is directed against the epitope present on human ER protein

located in the nucleus of norr ınd neoplastic cells. This test is indicated as and aid in the management, prognosis, and prediction of therapy outcome of breast cancer.
Anti-Progesterone Receptor (PR) primary antibody is a rabbit monoclonal antibody (IgG) that is used for the quantitative detection of the A, B and C isoforms of human progesterone receptor antigens in sections of formalin-fixed, paraffin-embedded tissue on an automated slide stainer platform used in conjunction with an indirect biotin streptavidin detection system. This test is indicated as and aid in the management, prognosis, and prediction of therapy outcome of breast cancer. The significance of PR is its role in determining the functionality of estrogen receptors in breast cancer cells. The presence of estrogen does not guarantee a response to endocrine therapy. One way to evaluate the functionality of the ER present in breast carcinoma is to determine if the proteins regulated by ER are expressed. PR receptor is such a protein, and has historically been used to monitor the functionality of ER.
The measures the percentage of positively stained nuclei of the tumor cells.
Note: False negatives are possible. Positive staining for receptor in the normal glands if present is a good internal control, and increases the likelihood that a negative result is a true negative.
Ki-67 = Rabbit Monoclonal (clone 30-9)
Anti-Ki-67 primary antibody is directed against the C-terminal portion of the Ki-67 antigen, which is expressed in the nuclei of proliferating cells (normal and neoplastic). The antibody identifies proliferating activity in sections of formalin-fixed, paraffin-embedded tissue on an automated slide stainer platform used in conjunction with an indirect biotin streptavidin detection system.
Assessment of tumor proliferative activity, IHC staining of tumor cell nuclei, can be used for prognosis and therapy planning. Ideal for use with small breast cancer specimens.
The percentage of positively stained tumor nuclei is reported.

The is an indirect biotin method.
Interpretation utilizes the instrument. The is a

Tissue Fixation
ER/PR testing guidelines were released which include fixation recommendations. All tissue should be fixed in neutral buffered formalin as soon as possible. Excisional and mastectomy specimen tissue should be fixed for a minimum of 6 and maximum of 72 hours. For tissue not fixed within the optimal time period or if fixation time is unknown it should be noted on report. Any negative Her2 IHC result without optimal fixation time should have Her2 FISH testing performed.

FISH, HER2/neu refl to IHC: CYTOGENETIC RESULTSCytogenetic Reference #: Test Setup Date: est Completion Date: Specimen Source: Left breast Clinical History:Invasive ductal carcinoma; HER2 IHC: Not AvailableInterphase Cells: 30 Metaphase Cells: 0FISH RESULTS:POSITIVE HER2 oncogene amplification detected by FISH analysisRatio of HER2 to D17Z1 is 8.0 (average count: HER2: 14.9, D17Z1: 1.9)nuc ish(D17Z1x1 3,HER2x5 25)[30]INTERPRETATION and COMMENTS:The HER2 FISH assay (Abbott Molecular) revealed amplification of the HER2 oncogene.A ratio of >2.2 is considered to indicate amplification.
Slides from this sample were evaluated by an in-house pathologist and deemed adequate for HER2 FISH analysis. The formalin fixation time was between 6 hours and 48 hours per the submitting facility. Controls were performed and provided the anticipated results. The imaging method was manual. This case has been reviewed by at least 2 observers. Results from this test are intended for use as an adjunct to prognosis in stage II, node positive breast cancer patients. Clinically relevant amplification has been documented only when an invasive component is involved. Clinical correlation is recommended. This test is also indicated as an aid in the assessment of patients for whom Herceptin treatment is being considered.
The performance characteristics of this assay have been determined by Performance characteristics refer to the analytical performance of the test.Reference:Wolff et al. Arch Pathol Lab Med

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*** ADDENDUM REPORT ***

ADDENDUM REPORT NUMBER TWO
FISH RESULTS: Specimen Source: Left breast (
A1)POSITIVE HER2 oncogene amplification detected by FISH
analysisRatio of HER2 to D17Z1 is 8.0 (average count: HER2:
14.9, D17Z1: 1.9)nuc ish(D17Z1x1
3,HER2x5
25)[30][Specific
testing information from this report has been added to the
microscopic description]
Addendum Report Issued By:

ADDENDUM REPORT NUMBER ONE
BREAST PROGNOSTIC PANEL: (test results on block A1).
TEST RESULT REFERENCE RANGES

Estrogen Receptor: POSITIVE (91%) = 1% is Positive
< 1% is Negative
Staining Intensity: Strong

Progesterone Receptor: POSITIVE (53%) = 1% is Positive
< 1% is Negative
Staining Intensity: Strong

Ki-67 (MIB1) Proliferation Marker: HIGH (33%) > 20% is High
10-20% is Borderline
< 10% is Low

These results were interpreted by I
Indiana. An additional addendum report will follow when
Her-2-neu tests are completed.
[Specific testing information and references have been added
to the microscopic description]
The original diagnosis remains unchanged.
Addendum Report Issued by:

P6

EXAMINATION: MRI BREAST ..ATERAL

Completed:

FULL RESULT:

Indication: Newly diagnosed left breast cancer.

Comparison: Multiple mammograms dating back to

FINDINGS:
Bilateral breast MRI was performed with and without contrast. CAD-stream computer-aided detection system was utilized to obtain multiplanar and 3-D reconstruction images. Subtraction images were created from dynamic contrast data. All images were evaluated at a work station.

The right breast demonstrates no abnormal areas of enhancement or adenopathy.

On the left, axillary lymph nodes are more hypervascular than on the right but morphologically they are similar and symmetric.

In the anterior upper-outer quadrant of the left breast, there is a 1.5 x 1.1 x 1.3 cm irregular enhancing mass consistent with the patient's known malignancy.

Multiple scattered nodules are identified throughout the left breast.
#1--3 cm superior, posterior and medial to the known malignancy is a 6 x 5 x 7 mm enhancing nodule. Review of the prior mammograms demonstrates that this was not present prior to this year's mammogram and therefore is highly suspicious for a satellite lesion.
#2--Approximately 1 cm posterior to the known malignancy is a 3 mm nodular area of enhancement.
#3--2.3 cm inferior and lateral to the known malignancy is a 5 mm nodule . These are all suspicious for satellite lesions.
#4--In the far lateral aspect of the breast, there is a 1-2 mm enhancing nodule.
#5--Even more laterally, is a 3-4 mm enhancing nodule. This contains a fatty hilum and these latter two nodules are likely lymph nodes given their far lateral location and appearance.
#6--In the posterior medial left breast a 3 mm enhancing nodule is seen.
#7-- In the far medial skin of the left breast there is a 4 x 2 x 4 mm enhancing nodule. This could represent either a benign or malignant skin lesion and therefore clinical correlation is recommended.

Interspersed between the known malignancy and the suspected satellite lesions, are vague areas of subthreshold nodular enhancement. A 1.6 and 1.4 cm area of this type of enhancement is seen in the medial breast. Comparison of the MIP

projections show that these o[illegible]ll areas of scattered enhancement and nodularity are very asymmetric to the right and therefore may relate to additional disease . Inclusion of all of the areas of enhancement shows that a large percentage of the breasts may be involved with disease measuring up to 8.0 x 6.8 cm. Multicentric disease should be excluded. If breast conservation therapy is considered, then biopsy of one or more of the nodules will be needed. The 7 mm lesion, 3 cm from the known malignancies (#1) would likely be visible by ultrasound and amenable to biopsy. Some of the smaller more posterior nodules in the medial breast may not be visible by ultrasound.

IMPRESSION:

1. The patient's known malignancy is identified in the anterior upper-outer quadrant and measures 1.5 cm. There are multiple scattered enhancing nodules seen within the breast that are suspicious for satellite lesions. Biopsies as clinically indicated should be performed.

HISTORY

Allergies: NKDA

Current Meds: See attached list please

PHYSICAL

VITAL SIGNS: BP- | P- | R- | T-

☐ See preprocedure record

	WNL	Abnormal	N/A
Mental Status	☒	☐	
HEENT	☒	☐	☐
Heart	☒	☐	☐
Lungs	☒	☐	☐
Abdomen	☒	☐	☐
Pelvic	☒	☐	☐
Extremities	☒	☐	☐

PMH: fibromyalgia, Sjogren's Syndrome, rheumatoid arthritis, osteo arthritis,

Surgical Hx: knee replacement x1, left breast biopsy

Family Hx: (-) breast cancer

Lab/X-Ray: ☐ Normal ☒ Abnormal (explain) Pathology: invasive ductal carcinoma

CC/Present Illness: left breast cancer, fibromyalgia, Sjogren's Syndrome, rheumatoid arthritis, osteo arthritis.

Admit / Pre-Op Diagnosis: left breast cancer

Treatment Plan: left modified radical mastectomy with sentinel node mapping with frozen section.

Surgery Date ____ H&P Date ____ Time ____ Signature ____ M.D.

PHYSICAL