## Case Scenario 1:

This case has been slightly modified from the case presented during the live session to add clarity.

**Background:**

46 year old married premenopausal female with dense breasts has noticed cysts in the past. Patient noticed a new lump in superior inner quadrant of left breast; did not resolve and has gotten bigger in size. No lumps in axillary.

**Patient History:**

Patient has been happily married for 21 years with 3 children, aged 3, 8, and 10. Patient performs breast self-exams; normal pap 2 years ago. History of asthma and hypertension, exercises on a regular basis. No use of tobacco, alcohol or illegal drugs.

**Risk Factors:**

All 3 kids born after the age of 35; First period at 11yrs of age; dense breasts; Cysts already develop regularly. Family history of breast cancer - paternal grandmother diagnosed at age 45 before menopause, mother diagnosed at age 45 before menopause. Died at age 73 from reoccurrence of breast cancer.

**Mammogram**:

2.3cm x 2.9cm x 3.2cm mass with irregular borders. Mild skin thickening present. An enlarged axillary lymph node was identified. 6 Y-shaped microcalcifications extended toward nipple, abnormal mass into pectoral muscle.

ASSESSMENT: BIRADS 5 - highly suggestive of malignancy appropriate action should be taken.

**Ultrasound**:

A non-cystic mass, solid appearing, abnormal vascularity, some skin thickening and mild tissue edema. Evaluation of the axilla demonstrates fatty-replaced lymph nodes which are slightly enlarged.

**Biopsy**:

Consistent with infiltrating breast cancer, 3-5 mitotic division per high power field, mild pleomorphism, positive for estrogen and progesterone receptors. Negative for HER2/Neu 1+.

**Treatment Plan:**

Physician recommended lumpectomy, sentinel lymph node biopsy followed by radiation and tamoxifen.

**Operative Report**

Superior inner quadrant lumpectomy with sentinel lymph node biopsy

**Pathology Report**

* Tumor Location: Superior inner quadrant, left breast
* Histology: invasive ductal carcinoma
* Tumor Size: 2.0cm x 2.5cm x 3.0cm mass
* Nottingham Histologic Score: 7
	+ Glandular/Tubular Differentiation: 3
	+ Nuclear Pleomorphism: 3
	+ Mitotic Rate: 1
* Margins: microscopically positive for invasive carcinoma.
* Skin involvement: Not identified. No dermal lymphatic involvement.
* Muscle involvement: Not identified
* Sentinel Lymph node biopsy
	+ 1 of 2 sentinel nodes positive-metastasis measuring 4mm
* Oncotype DX score of 22

**Radiation:**

Total dose of 40 Gy in 15 fractions of IMRT to the left breast and axillary lymph nodes. Tamoxifen started after radiation treatment finished.

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| * **What is the primary site?**
* **What is the histology?**
 | * **What is the grade/differentiation?**
 |
| **Stage/ Prognostic Factors** |
| CS Tumor Size |  | CS SSF 9 |  |
| CS Extension |  | CS SSF 10 |  |
| CS Tumor Size/Ext Eval |  | CS SSF 11 |  |
| CS Lymph Nodes  |  | CS SSF 12 |  |
| CS Lymph Nodes Eval |  | CS SSF 13 |  |
| Reg Nodes Positive |  | CS SSF 14 |  |
| Reg Nodes Examined |  | CS SSF 15 |  |
| CS Mets at Dx |  | CS SSF 16 |  |
| CS Mets Eval |  | CS SSF 17 |  |
| CS SSF 1 |  | CS SSF 18 |  |
| CS SSF 2 |  | CS SSF 19 |  |
| CS SSF 3 |  | CS SSF 20 |  |
| CS SSF 4 |  | CS SSF 21 |  |
| CS SSF 5 |  | CS SSF 22 |  |
| CS SSF 6 |  | CS SSF 23 |  |
| CS SSF 7 |  | CS SSF 24 |  |
| CS SSF 8 |  | CS SSF 25 |  |
| Summary Stage |  |  |  |
| Clinical Stage |  | Path Stage |  |
| **Treatment** |
| Diagnostic Staging Procedure |  |  |  |
| **Surgery Codes** |  | **Radiation Codes** |  |
| Surgical Procedure of Primary Site |  | Radiation Treatment Volume |  |
| Scope of Regional Lymph Node Surgery |  | Regional Treatment Modality |  |
| Surgical Procedure/ Other Site |  | Regional Dose |  |
| **Systemic Therapy Codes** |  | Boost Treatment Modality |  |
| Chemotherapy |  | Boost Dose |  |
| Hormone Therapy |  | Number of Treatments to Volume |  |
| Immunotherapy |  | Reason No Radiation |  |
| Hematologic Transplant/Endocrine Procedure |  | Radiation/Surgery Sequence |  |
| Systemic/Surgery Sequence |  |  |  |

## Case Scenario 2

**Background:**

02/15/15 The patient is an 63-year-old, white female who has been post-menopausal for several years. An abnormal mammogram was obtained on 01/07/15. Physical exam revealed a large mass in the upper outer quadrant of the right breast and a second fixed palpable mass in the axillary region. Patient was referred for a guided needle biopsy of the abnormal mammographic area.

The patient has had no bleeding or discharge from the nipple. There is a strong family history of breast cancer in her family sister died of breast cancer. The patient has no symptoms of fever or weight loss but does experience night sweats.

**Ultrasound**

2/15/15- Breast US: an ill-defined hypoechoic speculated nodule is identified measuring 3.4 x 4.3 x 2.2cm spiculated mass in the 11 o’clock right breast with involvement of the pectoralis minor. A 3cm mass in the axillary region most likely represents matted lymph node metastasis. A stereotactic biopsy of the breast nodule and of the axillary mass were performed to evaluate for potential malignancy.

**Pathology Report:**

2/15/15-Stereotactic Core Biopsy of breast mass-Invasive ductal carcinoma with comedo features, ER/PR negative (less than 1%), HER/2 negative 1+ by IHC. Nottingham Bloom Richardson score:5

Biopsy of axillary mass-invasive carcinoma

**Oncolologic Consult**

Patient completed a regimen of doxorubicin and cyclophosphamide followed by paclitaxel. An MRI of the breast showed the breast tumor now has a maximum dimension of 1.2cm and the axillary mass is no longer present. The patient was referred for a partial mastectomy and axillary node dissection. Following surgery she completed her regimen of chemotherapy.

**Operative Procedure-**partial mastectomy and axillary node dissection.

Final Diagnosis: Right breast, partial mastectomy: invasive comedocarcinoma (Modified Bloom Richardson grade I of III).

Synoptic Cancer Staging Report:

* Specimen Laterality: Right
* Tumor Site of Invasive Carcinoma: Upper outer quadrant
* Presence of Invasive Carcinoma: Invasive ductal carcinoma comedo subtype
* Histologic Grade: Tubule formation - Score 2: 10% to 75% 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 Rate: Score 1 (≤3 mitoses per mm2).

Nottingham Histologic Score of 5.

* Ductal Carcinoma In Situ: No DCIS is present
* Lobular Carcinoma In Situ (LCIS) : Not identified
* Tumor Size: Size of Largest Invasive Carcinoma: 1.1cm
* Skin involvement: Not identified.
* Muscle involvement: Not identified
* Invasive Carcinoma Margins: Margins uninvolved by invasive carcinoma. Distance is < 1mm
* DCIS Margins: DCIS not present in specimen
* Lymph nodes: 23 axillary lymph nodes all negative for metastasis
* Lymph-Vascular Invasion: Not identified
* Dermal Lymph-Vascular Invasion: No skin present
* Microcalcifications: Not identified; Sentinel lymph node biopsy not performed

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