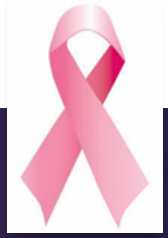


When is a breast lump just a lump and when is it more serious?

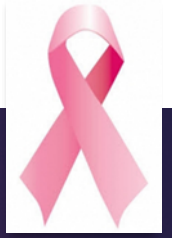
MELANIE CRUTCHFIELD, MD, FACS

THE UNITED ADVANCED PRACTICE REGISTERED NURSES OF AMERICA

WEST GEORGIA CONFERENCE

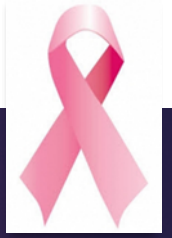
MARCH 4, 2023

Disclosure

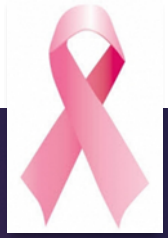


I have no actual or potential conflict of interest in relation to this program/presentation.

OBJECTIVES



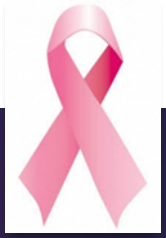
1. Benign Breast Disease
    1. Breast Pain
    2. Mastitis
    3. Benign Masses
    4. Lactation Complications
2. Breast Cancer
    1. Breast Cancer Screening
    2. Diagnostic Tools
    3. Surgical Options
    4. Medications
    5. Radiation
3. Case Reports



Breast Pain/Mastalgia

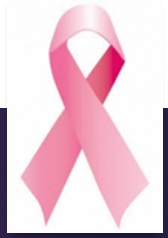
- The most common symptom experienced by women
- Cyclic Mastalgia
  - Relationship with the menstrual cycle
- Non-Cyclic Mastalgia
  - No relationship with the menstrual cycle/ postmenopausal
- Extramammary
  - Chest Wall

Cyclic Mastalgia



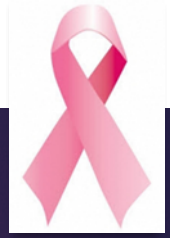
- Usually starts during luteal phase (days 14-28) of menstrual cycle and increases in intensity until menses
- Typically involves upper outer quadrant, radiates to axilla or upper arm, but can be diffuse
- Pain described as dull, heavy, aching

Non-Cylcic Mastalgia



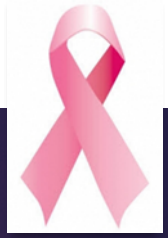
- Usually unilateral and localized to one quadrant of the breast, but can be diffuse
- Patients describe pain as burning, achy and sore
- Usually presents in 40-50s

Extramammary Pain



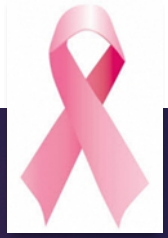
- Trauma
- Costochondritis
- Tietze Syndrome
- Arthritis
- Cardiac Causes

Mastalgia Diagnosis and Treatment



- Physical Exam
- Imaging
- Properly Fitting Bra
- Breast Pain Journal
- Exercise
- Relaxation/Meditation
- Low-Fat Diet
- Caffeine Restriction
- Evening Primrose Oil
- NSAIDs
- Consider OCP if Premenopausal

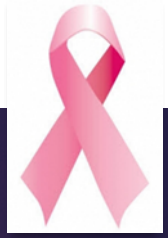
Mastitis



- 2-10% lactating women, but can occur in non-lactating women
- Causes
  - Trauma
  - Prolonged engorgement
  - Poor latching to the nipple
  - Smoking
  - Nipple piercing
  - Idiopathic
- Signs/Symptoms
  - hard, red, tender, warm, swelling
  - Fever, flu-like symptoms

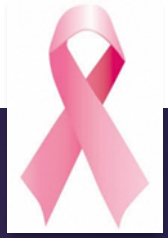
MASTITIS

Mastitis Management



- Continue breastfeeding/pumping
- Cold compresses to reduce pain and swelling
- Smoking Cessation
- Antibiotic Therapy
  - If doesn't respond after one course of antibiotic therapy—refer to breast surgeon

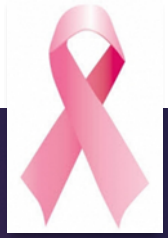
Breast Abscess



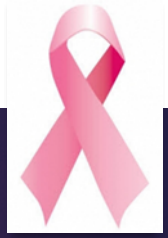
- Staph aureus, streptococcus or pseudomonas, anaerobes—peptostreptococcus, propionibacterium, bacteroides
- Peripheral—similar to infections elsewhere in the body; associated with underlying medical conditions (DM, hidradenitis, acne, trauma)
- Central—seen in smokers, obesity, nipple piercing
- Management
  - Broad Spectrum Antibiotic Therapy
  - Aspiration or Incision and Drainage
  - May require biopsy to r/o cancer or surgery

BREAST ABSCESS

Fibrocystic Breasts



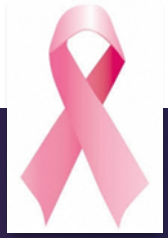
- Swelling of the glandular breast tissue caused by changes in the menstrual cycle
- Symptoms:
  - Breast pain/tenderness
  - Breast lumps or increased thickness
  - Fluctuating breast size
  - Nipple discharge



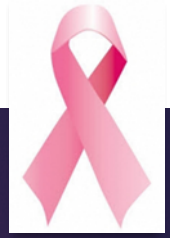
Fibrocystic Breasts

- Diagnosis: Mammogram/US, biopsy
- Management
  - Decrease caffeine
  - Sports bra
  - NSAIDs
  - Breast Pain Journal
  - Warm Compresses/Warm Shower
  - Low Fat Diet
  - Evening Primrose Oil
  - Vitamin E
  - Stop HRT
  - Consider OCP if premenopausal

Fibroadenoma



- Ages 15-35
- Hormonal factors involved in growth
- Involution after menopause
- Growth during pregnancy
- Well-defined palpable mass
- Rubbery, mobile
- Ultrasound and Biopsy for confirmation
- May need surgical excision



Can your nipples get a yeast infection?

- No!
- Fungal infections grow in warm, moist environments
- No need to culture the nipple (or the discharge)

Contact Dermatitis

- Ask what the baby has touched or ingested
- Ex: antibiotics mom may be allergic to

- Treatment:
- 0.1% triamcinolone cream

Nipple Bleb (Milk Blister)

- Inflammatory lesion on nipple surface
- Blocked nipple pore
- Resolve underlying factors (oversupply, subacute mastitis)
- Treatment: 0.1% triamcinolone cream and PO lecithin

Nipple Vasospasm

- Muscle spasm that decreases blood flow to the nipple
- Pain usually worse after baby de-latches; may radiate throughout the breast
- Treatment: Heat, wound care for secondary trauma, nifedipine for severe cases

Pump Trauma

LactApp
Women's Health

STAGES OF NIPPLE DAMAGE

STAGE I

Definition

Erythematous nipple. Pain on contact.

Recommendations

Assessment of the infant's latch-on and review of the oral structure.

STAGE II

Definition

A graze. Presence of vesicles, blisters or phlyctenas. Integrity of the epidermis.

Recommendations

Assessment of the attachment, clean with water and neutral soap 2-3 times a day. Dry with disposable paper towel. Leave to air, do not use soaking discs.
Check the baby's oral structure.
Avoid the use of lanolin-based creams that hinder the healing of the nipple wound, creating a hydrophobic layer.

STAGE III

Definition

Open wound, dermal involvement.

Recommendations

Assessment of the latch, clean with water and neutral soap 2-3 times a day. If fibrin is present in the wound, it is recommended to remove it.
Dry with disposable paper towel. Leave to air, do not use absorbent discs.
Avoid the use of lanolin-based creams that hinder wound healing, creating a hydrophobic layer.
Infection should be ruled out if it has more than 1 week of evolution. If confirmed, assess the need for topical antibiotic vs. systemic antibiotic.

STAGE IV

Definition

Underlying tissue affectation.

Recommendations

Assessment of the attachment, clean with water and neutral soap 2-3 times a day.
If fibrin is present in the wound, it is recommended to remove it. Dry with disposable paper towel. Leave to air, do not use soaking discs.
Usually overinfected by lytic bacteria. Evaluate the possibility of using systemic and/or topical antibiotics, ideally according to milk culture.

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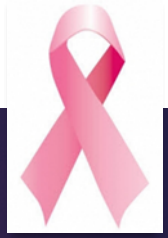
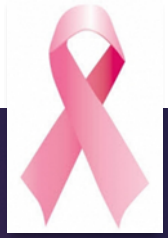
DENNIS CL, JACKSON K, WATSON J. INTERVENTIONS FOR TREATING PAINFUL NIPPLES AMONG BREASTFEEDING WOMEN. COCHRANE DATABASE SYST REV. 2014 DEC 10; (12):CD007366. DOI: 10.1002/14651858.CD007366.PUB2. PMID: 25500883

DUCTAL CARCINOMA IN-SITU



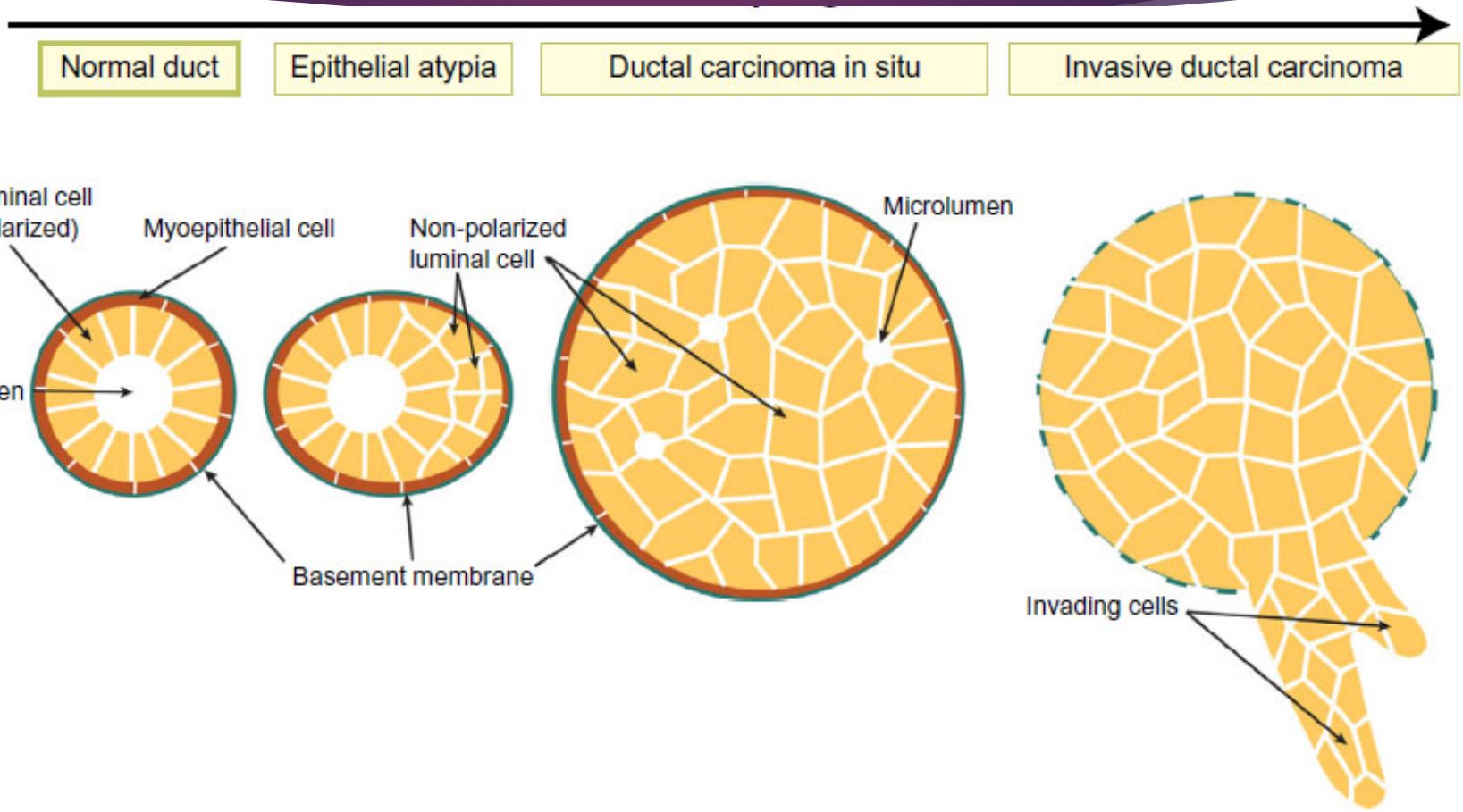
- Non-Invasive “Stage 0” Breast Cancer
- Cannot Spread
- Usually Calcifications on Mammogram
- ~25% will have invasive breast cancer on final pathology
- Up to 50% will eventually develop invasive breast cancer



INVASIVE BREAST CANCER

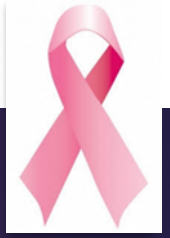
- Invasive Ductal Carcinoma
  - Most common type of breast cancer (50-70%)
  - hard, irregularly shaped mass
- Invasive Lobular Carcinoma
  - 2nd most common type of breast cancer (10-15%)
  - Small cells invade in a single-file fashion
  - High chance of multifocality
  - More favorable than IDC, but more difficult to detect

Cellular Breast Cancer Progression



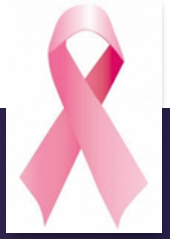
https://www.dovepress.com/emerging-role-of-cell-polarity-proteins-in-breast-cancer-progression-a-peer-reviewed-fulltext-article-BCTT

BREAST CANCER EPIDEMIOLOGY



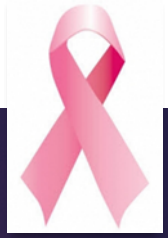
- 1 in 8 women will be diagnosed with breast cancer in their lifetime
- The average age of diagnosis for all women is 62
- The average age of diagnosis for white women is 63
- The average age of diagnosis for black women is 59
  - Black Women are 37% more likely to die from breast cancer than white women
- The average age of diagnosis for Hispanic women is 56

BREAST CANCER SCREENING

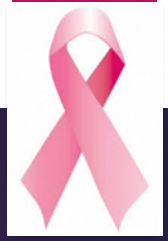


- FAMILY HISTORY
  - 10 years before your close degree relative was diagnosed
- Ages 40-44: annual mammograms*
- Ages 45-54: annual mammograms
- Ages 55 and up: mammograms every other year

IMAGING



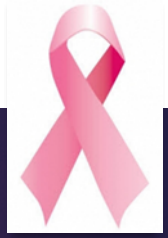
- Screening Mammogram
  - Series of low dose x-rays of the breast
- Diagnostic Mammogram
  - Magnification views of the breast and/or Ultrasound
  - If you have a breast problem
- Ultrasound
  - Helps to further evaluate masses or densities seen on mammogram
  - Used for palpable masses, nipple discharge breast pain
  - Can be used with mammogram for screening in some with very dense breast tissue
- MRI
  - Very sensitive, not very specific
  - Can detect very small breast masses, but can't determine if they are cancer or not
  - leads to more biopsies
  - High risk (>20%) women or breast cancer survivors



3-D Mammogram (Breast Tomosynthesis)

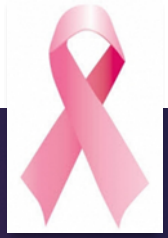
- X-ray moves around the breasts while the images are being taken
- 3-D images are then reconstructed from different angles
- Clearer images of dense breast tissue
- Detects smaller cancers and multiple tumors better
- Decreases recall rates
- Slightly higher radiation dose
- Takes longer to obtain and interpret

Surgery



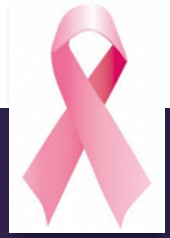
- Mastectomy
  - Removes breast +/- Nipple
  - Can get immediate or delayed reconstruction
  - May not need radiation
- Breast Conservation Therapy
  - Remove the mass and surrounding tissue
  - Chance for re-excision
  - Will likely need radiation
- Sentinel Lymph Node Biopsy
  - Dye injected travels to the most likely lymph node in axilla where the cancer may have spread
  - ~1-3 lymph nodes removed
- Axillary Lymph Node Dissection
  - 10-20 axillary lymph nodes removed

Chemotherapy/Immunotherapy

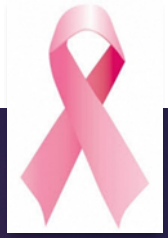


- Systemic treatment
- Can be given before or after surgery
- Usually prescribed in combination with each other
- Side Effects:
  - Hair Loss
  - Fatigue
  - Nausea and Vomiting
  - Immunosuppression
  - Easy Bruising
  - Mouth Sores
  - Neuropathy
  - Decreased Mental Function/Forgetfulness ("Chemo Brain")
  - Damage to other organs
  - Infertility
  - Premature Menopause

Hormone (Blocking) Therapy



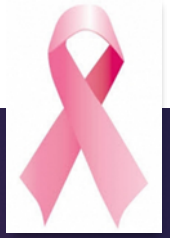
- Can be given before or after surgery
- Can be used as chemoprevention
- Estrogen/Progresterone + Breast Cancers
- Daily Pill taken 5-10 years



RADIATION THERAPY

- Kills cancer cells in an specifically targeted area
- Adjacent normal cells are better able to repair damage caused by radiation than cancer cells
- Reduces local recurrence and cancer related death
- Can be whole breast or partial breast radiotherapy
- Indications:
  - After partial mastectomy
  - After mastectomy if cancer invades chest wall, skin, >5 cm or positive lymph nodes
- Side Effects: fatigue, dermatitis, discomfort, scar tissue formation, hyperpigmentation of skin

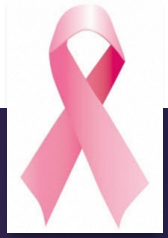
Case #1



50 year old African American woman with history of right breast invasive ductal carcinoma, ER/PR/HER2 negative at age 37 treated with right modified radical mastectomy and chemotherapy. Never had genetic testing.

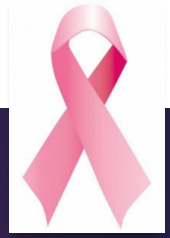
- **pMHx**: Epilepsy, CVA, CHF, GERD
- **pSHx**: Right Breast MRM with Left Reduction Mammoplasty, Gastric Bypass, Cholecystectomy, Hernia Repair, Hysterectomy with Right Salpingoophorectomy
- **Medications**: Albuterol, Vitamin C, Lipitor, Klonopin, HCTZ, Keppra, Toprol, MVN, PPI, Zoloft, Carafate
- **Allergies**: Dilantin, Latex, Zofran
- **Family History:** Colon & Pancreatic CA in Father (59, 62), Breast CA in Paternal Aunt (37), Pancreatic CA in Paternal Uncle (59)
- **Social History**: Denies Smoking/ETOH/Ilicit Drugs
- **Gyn Hx:** Menarche 13, TAH/RSO age 34, G2P2, 1st child age 17, no history of breastfeeding, no history of HRT

Case #1



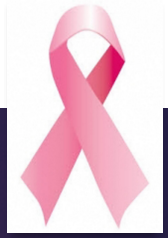
- Genetic Testing: BRCA1 Mutation
- Surgery: Left Prophylactic Mastectomy with Immediate Reconstruction
- Future Plan for Left Salpingoophorectomy

COMMON GENETIC MUTATIONS



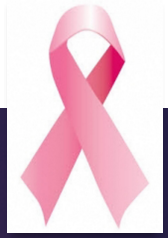
- BRCA1
  - Breast, Ovarian, Prostate, Pancreatic, Testicular CA
- BRCA2
  - Breast, Ovarian, Prostate, Pancreatic, Melanoma
- Hereditary Diffuse Gastric Cancer
  - Gastric, Breast, Prostate, Colorectal
- Lynch Syndrome
  - Colon, Gastric, Small Intestine, Liver, Gallbladder, Upper Urinary Tract, Brain, Skin, Ovarian, Endometrial, Breast CA

COMMON GENETIC MUTATIONS (cont)



- Peutz-Jegher Syndrome
  - Breast and Gastrointestinal Cancers
- Ataxia-Telangiectasia Syndrome
  - Breast CA, Leukemia, Lymphoma, Cerebellar Ataxia, Immune Deficiency, Telangiectasias
- Li-Fraumeni Syndrome
  - Breast, Brain, Soft Tissue Sarcoma, Osteosarcoma, Leukemia, Adrenocortical Carcinoma, Colon
- Cowden Disease
  - Breast, Ovary, Follicular Thyroid, Colon CA

Who Should Be Referred For Genetic Testing?



Personal History

- Ovarian CA
- Breast CA
  - Diagnosed ≤50 y/o
  - ER/PR/HER2 neg ≤60 y/o
  - Two Breast CA primaries
  - ≥1 relative Ovarian CA
  - ≥1 relative Breast CA ≤50 y/o
  - ≥2 relatives Breast, Ovarian, Pancreatic, Prostate CA
  - Male Breast CA
- Metastatic Prostate CA
- Ashkanazi Jewish Descent w/Breast, Ovarian & Pancreatic CA

Family History

- Known Genetic Mutation
- ≥2 Breast CA Primaries in One Person
- ≥2 People on the Same Side of the Family w/One Diagnosed ≤50 y/o
- Ovarian CA
- Male Breast CA
- First or Second Degree Relative w/Breast CA ≤45 y/o

National Comprehensive Cancer Network®

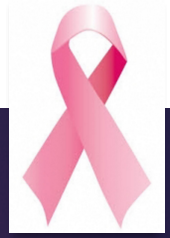
NCCN Guidelines Version 3.2023
Hereditary Cancer Testing Criteria

TESTING CRITERIA FOR HIGH-PENETRANCE BREAST CANCER SUSCEPTIBILITY GENES
(Specifically *BRCA1, BRCA2, CDH1, PALB2, PTEN,* and *TP53*. See GENE-A)[a,e,f,g]

Testing is clinically indicated in the following scenarios:

- See General Testing Criteria on CRIT-1.
- Personal history of breast cancer with specific features:
  - ≤50 y
  - Any age:
    - Treatment indications
      - To aid in systemic treatment decisions using PARP inhibitors for breast cancer in the metastatic setting[h,i] (See NCCN Guidelines for Breast Cancer)
      - To aid in adjuvant treatment decisions with olaparib for high-risk,[j] HER2-negative breast cancer[h]
    - Pathology/histology
      - Triple-negative breast cancer
      - Multiple primary breast cancers (synchronous or metachronous)[k]
      - Lobular breast cancer with personal or family history of diffuse gastric cancer See NCCN Guidelines for Gastric Cancer
    - Male breast cancer
    - Ancestry: Ashkenazi Jewish ancestry
  - Any age (continued):
    - Family history[l]
      - ≥1 close blood relative[m] with ANY:
        - breast cancer at age ≤50
        - male breast cancer
        - ovarian cancer
        - pancreatic cancer
        - prostate cancer with metastatic,[n] or high- or very-high-risk group (Initial Risk Stratification and Staging Workup in NCCN Guidelines for Prostate Cancer)
      - ≥3 total diagnoses of breast cancer in patient and/or close blood relatives[m]
      - ≥2 close blood relatives[m] with either breast or prostate cancer (any grade)
- Family history of cancer only
  - An affected individual (not meeting testing criteria listed above) or unaffected individual with a first- or second-degree blood relative meeting any of the criteria listed above (except unaffected individuals whose relatives meet criteria only for systemic therapy decision-making).[o]
    - If the affected relative has pancreatic cancer or prostate cancer only first-degree relatives should be offered testing unless indicated based on additional family history.
  - An affected or unaffected individual who otherwise does not meet the criteria above but has a probability >5% of a *BRCA1/2* pathogenic variant based on prior probability models (eg, Tyrer-Cuzick, BRCAPro, CanRisk)[p]

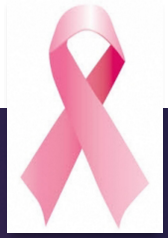
Ovarian and Pancreatic Genetic Testing



Testing is clinically indicated in the following scenarios:
• See General Testing Criteria on CRIT-1.
• Personal history of epithelial ovarian cancer[r] (including fallopian tube cancer or peritoneal cancer) at any age
• Family history of cancer only ▸ An unaffected individual with a first- or second-degree blood relative with epithelial ovarian cancer[r] (including fallopian tube cancer or peritoneal cancer) at any age[o] ▸ An unaffected individual who otherwise does not meet the criteria above but has a probability >5% of a *BRCA1/2* pathogenic variant based on prior probability models (eg, Tyrer-Cuzick, BRCAPro, CanRisk)[p]

Testing is clinically indicated in the following scenarios:
• See General Testing Criteria on CRIT-1.
• Exocrine pancreatic cancers[s] ▸ All individuals diagnosed with exocrine pancreatic cancer[t] ▸ First-degree relatives of individuals diagnosed with exocrine pancreatic cancer[u] • Neuroendocrine pancreatic tumors - See NCCN Guidelines for Neuroendocrine and Adrenal Tumors

WHO IS HIGH RISK FOR BREAST CANCER?



MILD

Early menarche (<12)

Late menopause (>55)

Nulliparity

Proliferative benign disease

Dense Breasts

Obesity

Alcohol use

Hormone replacement therapy

Birth Control Use

Not breastfeeding

MODERATE

Age >35 first birth

First-degree relative with Breast Cancer

Radiation exposure

Prior Breast Cancer

HIGH

Gene mutation

Lobular Carcinoma in Situ

Atypical hyperplasia

Risk Assessment Tools

Gail Model

Age
Valid for women 35-85 years old.
years

First menstrual period
- Unknown
- 7-11 years old
- 12-13 years old
- >13 years old

First live birth
- Unknown
- No births
- <20 years old
- 20-24 years old
- 25-29 years old
- ≥30 years old

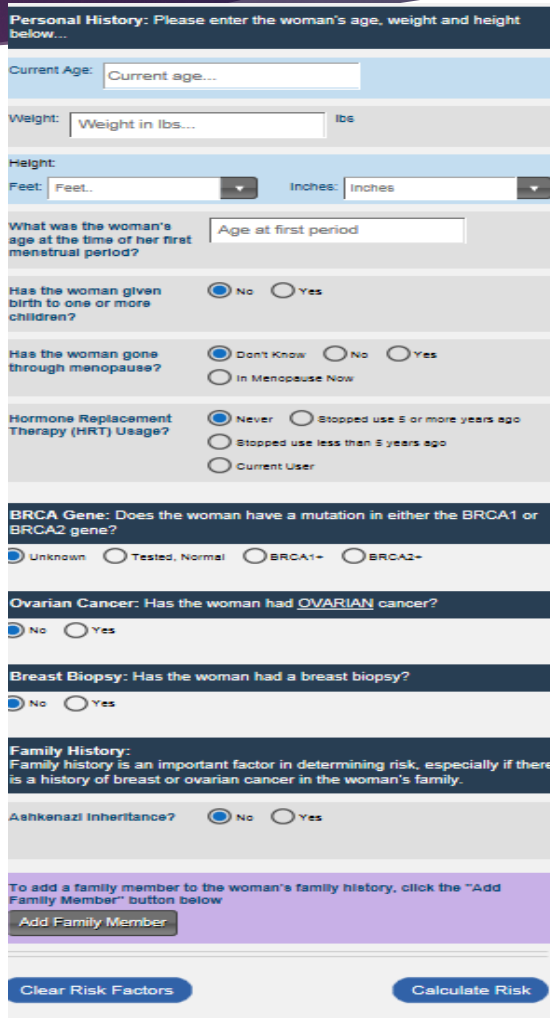
First-degree relatives with breast cancer
Include only mother, sisters and daughters
Unknown | 0 | 1 | >1

Previous breast biopsy?
Unknown | 0 | 1 | >1

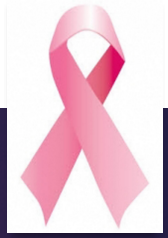
Race/ethnicity
- White
- African-American
- Hispanic
- Asian-American
- American-Indian/Alaskan Native
- Unknown

Tyrer-Cuzick

IBIS

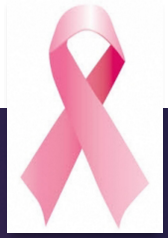


HIGH RISK SCREENING



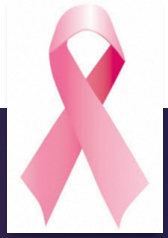
- Clinical Breast Exam
  - Every 6-12 months
- Mammogram
  - Annually Starting at 30 or 10 Years Younger Than 1st Degree Relative's Diagnosis
- MRI (If Lifetime Risk >20%)
  - Annually Starting at 25 or 10 Years Younger Than 1st Degree Relative's Diagnosis

Case #2



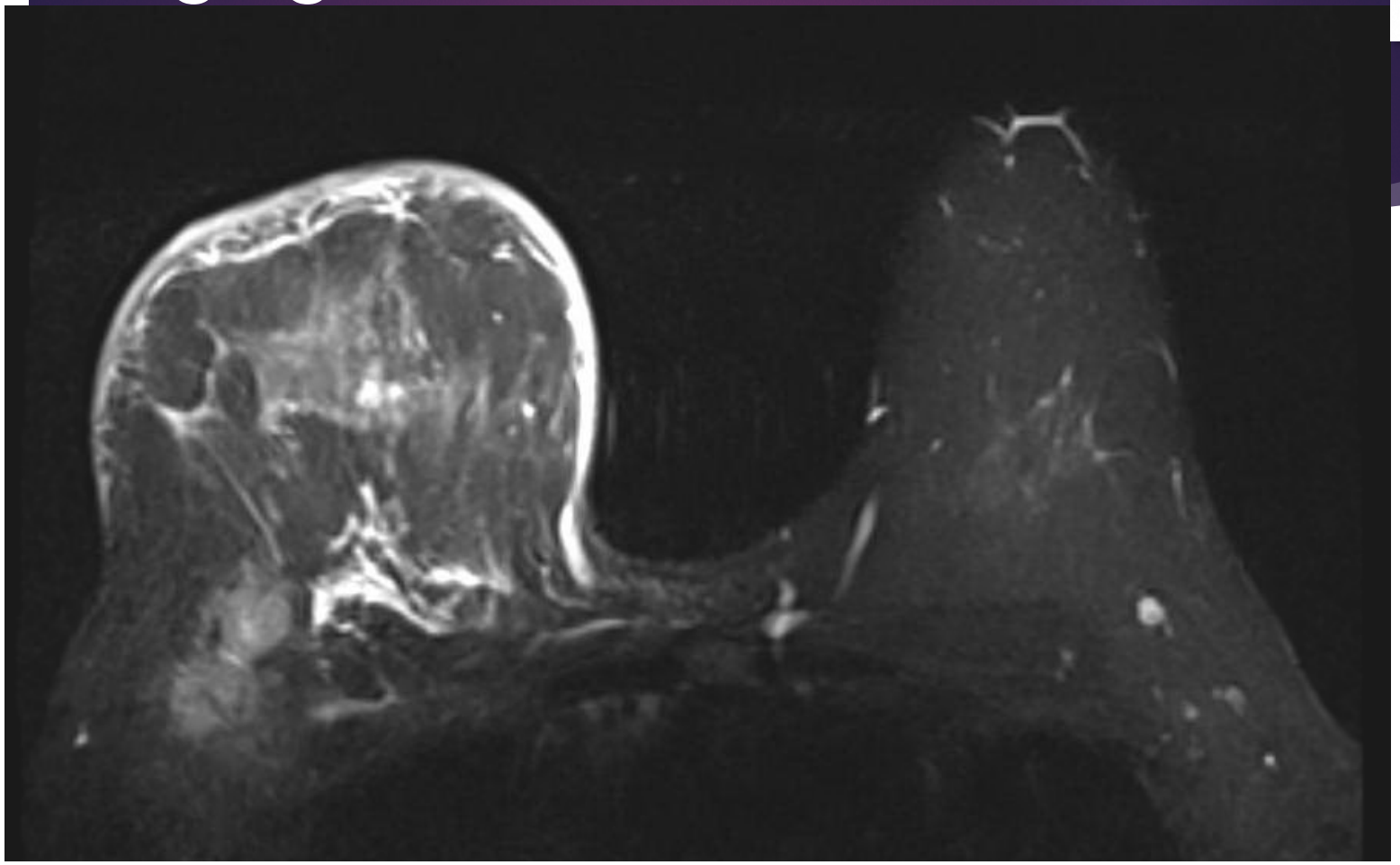
47 year old African American woman with three months of right breast pain and swelling. Prescribed Bactrim, then Ceftin with worsening symptoms

- **pMHx**: GERD, Mitral Valve Prolapse, Hyperlipidemia
- **pSHx:** Hysterectomy age 37
- **Medications**: None
- **Allergies**: None
- **Family history**: HTN in Mother, Unknown Cancer in Father
- **Social**: Denies Smoking/ETOH/Illicit Drugs
- **Gyn Hx:** G2P2 . Menarche 12, Hysterectomy age 37 (Ovaries Intact), Age at first child 25; +Breastfeeding; No HRT Use



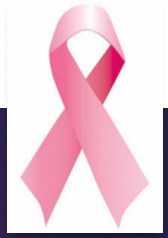
- Breast Exam:
  - Right breast with severe edema and central erythema, periareolar ulceration. Nipple areolar area thickened with an additional area of thickening in upper-outer quadrant

Imaging



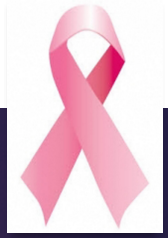
Large confluent mass right upper outer breast in the 12:00 position at anterior to middle depth with areas of central necrosis along the more superior margin of tumor mass, measuring up to 3.9 x 4.6 x 3.3 cm, with adjacent nonnecrotic mass enhancement anteroinferiorly measuring up to 2.7 x 4.0 x 3.3 cm. Anterior and inferior to this are areas of non mass enhancement extending to the nipple, which is inverted with diffuse skin thickening with enhancement. Findings are consistent with known inflammatory breast cancer. Metastatic nodes are present in the tail the breast along with axilla at both level 1 and level 2 stations.

Pathology



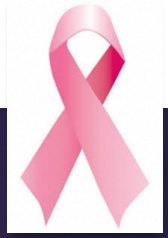
- Invasive Ductal Carcinoma, Grade III
  - ER/PR negative, HER2 positive
  - Ki67 67.2%

INFLAMMATORY BREAST CANCER

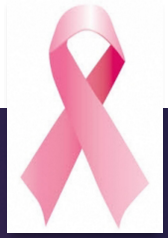


- Rare but aggressive form of breast cancer
- Arises when breast cancer cells block the lymphatic vessels in the skin of the breast
- Presentation
  - Breast appears swollen, red and inflamed like an infection
  - Does not usually present as a mass; grows in sheets of cells in the lymphatics of the skin, making it difficult to detect in physical exam
- Diagnosis
  - Punch Biopsy
  - Tumor cells in the dermal lymphatics
- Treatment
  - Neoadjuvant Chemotherapy, Modified Radical Mastectomy then Radiation

When to Refer to a Breast Specialist?



- Pts at high risk of breast cancer +/- genetic malformation
- Need for a biopsy
- Breast masses/abnormalities (palpable or via imaging) that causes concern
- If breast changes do not resolve with antibiotic therapy or presents as a mass



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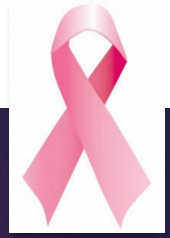

Thank you!