

Reproductive System

Conditions of the Breast

Breast A&P

*Review on own

Benign Breast Disorders

Fibrocystic Breast Condition

- Most frequent lesion of the breast
- Fluid-filled cysts
- Ages 35-50 years
- Hormone sensitive: occurs during reproductive years and disappears with menopause
- Clinical Manifestations
 - Round, palpable lumps – *movable, tender, multiple, bilateral*
 - *Larger & more tender pre-menstrually*
- Diagnosis
 - Distinguish from cancer – aspiration or biopsy
 - Cysts do not become malignant, makes malignant lumps difficult to find
- Treatment
 - Supportive bra
 - Heat & cold application
 - Mild analgesics
 - Dietary changes – eliminate caffeine, decrease salt
 - Medications – diuretics (fluid-filled, reduces swelling), danazol (estrogen agonist-decreases estrogen stimulation therefore decreases pain and nodularity)
 - Teach BSE

Fibroadenoma

- Common breast tumor usually in young women and adolescents (15-25 yrs) increase in African American
- Possible cause is increased estrogen sensitivity in localized area of breast
- Non tender, round, firm, movable, usually unilateral
- Always benign and often stop at 2-3 cm; do not become malignant
- Diagnosis and treatment: excision and biopsy

Mammary Duct Ectasia

- Benign breast disease in peri and postmenopausal female involving the ducts in the subareolar area
- Usually involve several bilateral ducts
- Signs and symptoms:
 - Nipple discharge that is multicolored and sticky, inflammation, initially painless but can progress to pain around nipple and areola swelling
 - Not associated with malignancy
- Treatment:
 - Warm compresses, antibiotics, may require surgical excision of ducts

Gynecomastia

- Overdevelopment of mammary glands in male
- Seen during puberty and after 40 years old
- Caused by increased estrogen
- Usually nonmalignant biopsy in older male to rule out cancer

Malignant Breast Disorders

Paget's Disease

- rare type of cancer involving skin of nipple and usually areola.
- Most people with Paget disease of breast also have one of more tumors inside same breast
- Can occur in both women and men, but mostly women
- approx. 1-4% of all cases of breast cancer also involve Paget disease of breast

Breast Cancer

- Incidence
 - 1 in 8 American women affected
 - #1 incidence of cancer in women (other than skin CA)
 - #2 mortality of cancer in women (lung CA #1)
 - Less than 1% occur in men
 - Peak age 45-49 but usually over age 60
- Risk factors
 - Female
 - Increasing age (age 50 or greater)
 - Previous history of breast cancer
 - Family history of breast cancer (first degree)
 - Nulliparity
 - First pregnancy after age 30
 - Genetic mutations: BRCA 1 & BRCA 2
 - Obesity
 - High fat diet
 - Alcohol consumption
 - Exposure to x-rays (CXR)
 - Estrogen use (BCP, HRT)
 - History of cancer in other organs: ovarian, colon, uterine
 - Atypical hyperplastic breast disease
 - Early menses (less than 12) & late menopause (greater than 55)

Breast Self Exam /Awareness

*favorable prognosis depends on early diagnosis- 50% are diagnosed in late stages

Clinical Manifestations:

- Non-tender lump –often in upper outer quadrant
- Nipple discharge – bleeding or clear
- Nipple retraction
- Skin dimpling
- Asymmetry of breasts – affected breast is elevated
- Peau d'orange skin

- Nodular axillary masses
- Ulcerations (late)

Pathophysiology:

*Disease of breast tissue can progress to systemic involvement

Progression of disease:

- Begins as an atypical area then progresses to cancer in situ, then becomes invasive, then progresses to the lymph nodes and systemic circulation
- As it grows it becomes attached to the chest wall or overlying skin

Breast cancer metastasizes to the lungs (69%), bone (67%) mediastinal lymph nodes (76%) and liver (65%), brain (25%) and skin (30%)

Diagnosis:

- Mammography – early detection and painless
- US – fluid vs solid mass
- MRI – decreased radiation exposure; dense breast tissue

- Biopsy
 - Needle: is a simple rapid and accurate procedure to detect breast cancer done with fine needle aspiration- review tissue on slide
 - Incisional: is done in OR, open biopsy where a piece of tissue is obtained and sent to lab for frozen section with potential for mastectomy if positive
 - Excisional: biopsy removes entire tumor with margin of tissue for biopsy and may be definitive treatment
 - Stereotactic: uses mammograms during biopsy to pinpoint location of tumor prior to biopsy
 - Sentinel Lymph Node Biopsy: helps surgeon identify lymph nodes that drained first from the tumor site
 - o dye is injected into tumor site, then the surgeon dissects the first lymph node that the dye has located, it is checked for malignancy by pathology.

- Hormone Receptor Assays:
 - Aids in typing and staging; helps with planning for treatment
 - Estrogen +/- & Progesterone +/-
 - Positive: slower growth rates, better outlook short-term and hormone dependent- means treatable with hormone therapy; can sometimes come back many years after treatment
 - Negative: grow faster, if they come back after treatment it's often in the first few years. More common in women who haven't gone through menopause yet
 - HER- 2: growth-promoting protein; breast cells with higher than normal levels of HER-2 are called HER-2 positive. (grow and spread faster than other breast cancers, respond to treatment that targets HER-2 protein)
 - Triple negative (ER -/ PR -/HER 2 -): more aggressive, more common in younger women, blacks & hispanics.

Clinical Staging

- Stage I
 - Localized tumor
- Stage II

- Up to 5 cm or axillary nodes involved
- Stage III
- > 5 cm &/or extends to chest wall or skin
- Stage IV
- Distant metastasis (lung, bone, liver, brain)

Treatment

- Surgery
 - Lumpectomy: considered breast conservation surgery, is a wide excision of tumor, sentinel node dissection, &/or axillary node and radiation
 - Wedge resection: removal of tumor and 2-3cm wedge of normal tissue surrounding it and portion overlying skin
 - Total or simple mastectomy: is removal of entire breast, most or all axillary lymph nodes leaving the chest wall muscles
 - Modified radical mastectomy: used for tumors greater than 2.5 cm, removal of breast and axillary nodes but the major chest wall muscles remain;
 - Most prefer this over lumpectomy when given a choice; have the choice of reconstruction and if chooses so can be done right away following mastectomy or can wait until post op recovery (6 months)
 - This one and breast conservation surgery with radiation are the most common options for resectable cancers, and those women diagnosed with early stage cancer. Overall survival rate with the lumpectomy & radiation is same as this surgery.
 - Radical mastectomy: removal of entire breast, skin, chest wall muscles and axillary lymph nodes
- Pre-op Nursing Care
 - Informed consent: 2 stage procedure (biopsy then treatment); patient must be informed of diagnosis & all treatment options; psychological impact
 - Patient teaching: teach post op expectations, TCDB, exercises, IV, drains, VS, drsg
 - Emotional support: body image changes
 - Nursing diagnoses: Deficient knowledge; Ineffective individual coping; Disturbed body image
- Post-op Nursing Care
 - Pressure dressing- decreases bleeding, facilitates skin adherence
 - Drain (JP, hemovac)- prevents fluid build up
 - Incisional care
 - Pain management (incisional & phantom pain)
 - Arm mobility- placed in semi fowlers position with arm on affected side elevated on a pillow; post op exercises within first week; flexing and extending fingers early; hand and wrist; flex and extend elbow in first 24 hours; encourage self-care, no abduction in early stage
 - Risk for lymphedema

Postmastectomy Exercises:

- Prevent contractures
- Maintain muscle tone
- Improve lymph & blood circulation

- Increase mobility
- 10-12th day start pendulum swing
- Gradually work towards full ROM 4-6 weeks
- Simple exercises like this can be painful and difficult

Post Op Care-Lymphedema

- Complication of extensive OR procedure
- Edema of the operative arm due to lymph node removal & decreased lymph drainage
- Occurs immediately or anytime during life as a result of trauma or infection
- Exercise & elevation help to decrease edema
- No BP or venipuncture on operative side (circulatory, r/f infection)
- Elastic pressure gradient sleeves- facilitates venous return, compresses to maintain max level of volume, manual massage- helps mobilize fluid accumulated

Post Op Nursing Care

- Ineffective Individual Coping
 - Denial & fear
 - Need support
 - Community resources- support groups, information, recovery kits, tools, prosthetics
 - Concerns with self-image, role, reactions of others; full impact may not occur until at home
 - Prosthesis: many forms and different prices
- Deficient Knowledge
 - Focus on self-care
 - Stress importance of continuing BSE, mammograms
 - Follow-up work up for mets
 - s/sx to report after going home
- Reconstructive Alternative
 - Reconstruction can begin during the original breast removal procedure or after some healing has occurred (~ 6 months)
 - A tissue expander (saline-filled implant) is often placed during the original procedure
 - Saline or silicone implants – permanent placement
 - Autologous flaps - for reconstruction (abdomen, back, buttocks, inner thighs)
 - Nipple reconstruction
 - tissue from the labia, abdomen, or inner thigh

Teaching Guide regarding Arm on Operative Side Following Mastectomy

- Hand Care- good hand washing and nail care
- Avoid...
 - cuts, scratches, pinpricks, hangnails, insect bites, burns and the use of strong detergents since these can lead to serious infection with increased swelling in the affected arm
- Do Not...
 - Carry your purse or anything heavy with affected arm
 - Wear a wristwatch or other jewelry on this arm
 - Cut or pick cuticles or hangnails on this hand

Work near thorny plants or dig in the garden

Reach into a hot oven

Hold cigarettes in this hand

Permit this arm to be used for injections, blood withdrawals, blood pressure

- DO...

Wear a loose rubber glove on this hand when washing dishes

Wear a thimble when sewing and take care to avoid pinpricks

Apply a good lanolin hand cream several times daily

Wear a life guard medical aid tag engraved to read 'CAUTION-LYPHADEMA ARM-NO TESTS

Contact MD if arm gets red, warm or unusually hard or swollen

Return for check-ups and re-measurement for a new gradient elastic sleeve in two months

Treatment Modalities- Radiation (local control)

3 indications:

- Primary treatment or conjunctive with surgery to prevent local occurrence
- Shrink tumor before surgery
- Palliative for pain control (local or mets)
- External radiation
- Brachytherapy
- Side effects of radiation
- Skin care

Treatment Modalities-Chemotherapy

- Uses:
 - cytotoxic drugs to destroy cancer cells
 - Preop – shrink tumor, suppress growth
 - Fail to respond to hormone therapy
 - Breast CA responds well to chemo
 - Used prophylactic in Stage II – undetectable mets, therefore treat early
- Agents
 - Combo = best rather than single agent
 - Different actions on cell growth and divisions
 - Most common combo's:
 - CMF (cyclophosphamide/Cytosan), methotrexate, 5-FU (fluorouracil)
 - CAF (Cytosan, Adriamycin, 5-FU)
- Side effects
 - Healthy cells also affected, rapidly growing cells

Treatment Modalities - Hormonal Therapy (hormone receptor positive cancer)

- Tamoxifen – antiestrogen; slows growth; runs risk of uterine CA & DVT/PE
 - o Raloxifene (SERMs – prevents OP) less adverse effects
- Testosterone – used to be tx of choice, not anymore
- Surgery to remove sources of estrogen
 - Oophorectomy – premenopausal
 - Adrenalectomy – need cortisol and sodium replenishment post

- Hypophysectomy – pituitary gland – all estrogen production, need cortisol post

Genetics

- BrCA I mutations
- BrCA II mutations
 - Helps develop tx plan
 - Can do genetic testing for those at risk (two first-degree relatives with breast CA prior to age 50 or family h/o breast & ovarian cancer)
- Her-2
 - Antigen often found on surface of breast cancer cells
 - Trastuzumab (Herceptin) – monoclonal antibody, targeted therapy; blocks signals that tell cell to grow
 - Immunotherapy
 - Can be given alone or in combination with other chemotherapies