Vesalius SCALpel™ : Benign breast disease (see also: breast folios)

Breast cancer risk

non-proliferative: only fibroadenoma may be associated with a slight risk of cancer
proliferative: moderate or florid hyperplasia, papilloma with fibrovascular core slight increased risk (1.5-2X)
proliferative with atypia: atypical ductal/lobular hyperplasia (ADH, ALH), 4-5X risk

Imaging

mammography: breast imaging, reporting and data system (BI-RADS)
abnormal findings: mass, microcalcifications, asymmetric density, developing density, architectural distortion, dilated ducts, radial scar
classification:
0 incomplete
1 negative
2 benign, standard surveillance
3 probably benign, 4-6mo f/u mammo, most FCD, fibroadenoma
4 suspicious, biopsy recommended, 30% cancer, most DCIS
5 highly suspicious, biopsy recommended, most infiltrating ductal
benign calcifications: skin, vascular, coarse (popcorn, degenerating fibroadenoma), large rod-like, round, eggshell, milk of calcium
indeterminate calcifications: amorphous, indistinct
higher risk: pleomorphic (different shape, size)
US high sensitivity, low specificity, doesn't see microcalcifications
B (brightness mode)
benign characteristics: smooth distinct margins, homogeneous, width > height
through-transmission = posterior enhancement
MRI: young, dense, high risk, identify additional suspicious areas in patient with mammographically identified lesion, guide extent of wide excision; high false positive
ductography, ductoscopy (0.9mm scope) for unilateral, bloody discharge

Pain

80% of women have some degree of fibrocystic disease, cyclical enhancement of pain with menses
chronic cystic mastitis: ductal blunting, papillomatosis, sclerosing adenosis, apocrine metaplasia
rarely a symptom of cancer (5-12%)
non-cyclical pain: increased estrogen and prolactin, decreased progesterone
caffeine: theory: methylxanathines interfere with degradation of ATP in breast
restricting caffeine may decrease nodularity, minimal effect on pain
essential fatty acid deficiency
primrose oil extract corrects?
2w anti-inflammatory, reassurance, 85% success

oral contraceptives may treat or initiate
bromocryptine for hyperprolactinemia
danazol: binds progesterone and androgen receptors (not estrogen recep.)
    very effective (70%) with cyclical pain
    prohibitive side effects: virilization, hirsuitism, acne, lowered voice
TAM: 98% effective for cyclical, 50% non-cyclical; 10mg/d X 6mo
    hot flashes in pre-menopausal
postmenopausal pain
    r/o non-breast causes
    D/C hormones, consider progesterone alone (bloating side effect)
    bromocryptine ineffective
    most likely factor estrogen
Mondor's disease: superficial thrombophlebitis lateral side of breast

Fibroadenoma

median age 30y
most common breast lesion in child
    excisional bx in growing breast can cause deformity, wait to late puberty
US best imaging modality in dense young breast
doubling time 6-12mo, max size usually < 3cm
15% may show some regression
may observe if proven benign, most get excised
    triple negative dx: clinical breast exam, imaging, biopsy (FNA, core)
    short term f/u if still uncertain
periareolar less mobile

Giant fibroadenoma

young (15-20), > 5cm, black and oriental higher incidence
rapid enlargement over several weeks
benign, not associated with malignant degeneration
epithelial and connective tissue components
can infarct, cause pain
local excision, breast usually regains normal shape
(differentiate from juvenile hypertrophy which is usually bilateral)

Phyllodes tumor

difficult to differentiate from fibroadenoma
peak 35-55
local recurrence potential
1 cm margin
rarely (10%) transform to cancer, rarely metastasize
    areas of necrosis suspicious
    malignant do not spread to lymph nodes

in child 95% benign

Cyst

10% incidence, late reproductive, peak 40-50
involute after menopause if not on hormone replacement therapy (HRT)
aspiration definitive Rx 90% of cases
    bloody send for cytology
    if residual mass after aspiration do Bx
intraductile papillary cancer can present as cyst

Discharge

unilateral, single duct, spontaneous, persistent = pathologic
galactorrhea
    bilateral in non-lactating usually due to mechanical stimulation of breast
    seen in extremes of reproductive life
colored discharge
    duct ectasia common, excise subareolar ducts for persistent discharge if no plan for future breast feeding
bloody discharge
    15% underlying Ca
    risk of malignancy increases with age
    majority intraductile papilloma, most common cause
        most papillomas within 2-3cm of nipple
    if can localize do local duct excision, if not do general subareolar duct excision

Infection

lactating breast infection
    most < 1mo postpartum, staph aureus
    aspirate, treat with antibiotics often successful
        avoid chance of milk fistula
        if doesn't resolve do I&D
    breast feeding not contraindicated
subareolar abscess/mammillary fistula (Zuska's disease)
    recurrent subareolar abscess from intermittent duct obstruction
    reproductive years
    95% associated with tobacco use
    mixed aerobic/anaerobic
    excise involved ducts
    recurrence common
peripheral abscess
    less common than subareolar
    post menopausal
    staph aureus

risks: diabetes, steroids
drain (aspiration) and antibiotics (85% successful) or I&D

Gynecomastia

3 peaks: neonatal, puberty, adult
40% of 10-16yos,
probably related to increased estrogen to androgen ratio
if bilateral reassure
unilateral probably local factor: hormone receptors or local hormone conversion
decreased androgens: anorchia, Klinefelters, cryptorchidism, viral orchitis, bilateral torsion
increased estrogens: testicular tumor, adrenal disease, advanced liver dis, hyperthyroidism, starvation, refeeding; ectopic HCG (lung, liver, kidney)
majority resolve 6 mo
3rd peak >60
R/O cancer
drugs:
classes: hormones, antiestrogens, antibiotics, antiucler, chemotherapy (alkylating), cardiovascular, psychotropic, substance abuse
examples: androgens, spironolaceone, digoxin, Ca++ channel blockers, marijuana, griseofulvine, ketaconazole, pheonthiazine, reserpine, tricyclics, cimetadine (& other H2 blockers), methyldopa, INH, metocloprimide, chemotherapy agents, antihypertensive, Rogam
trial TAM 10mg BID X 3mo, or excise
if significant amt true breast tissue, liposuction helps contour periphery and minimize saucer-like defect
pseudogynecomastia: fatty, diffuse

Pseudoangiomatous stromal hyperplasia

non-neoplastic mass, thickening, may be incidental finding
complex anastomotic patterns, resemble angiosarcoma
endothelial markers distinguish angioSA
mammo: round, oval, well circumscribed
US hypoechoic with cystic spaces
excise with margin, 7% recurrent
ER/PR negative, etiology uncertain

Granulomatous mastitis

ascending ductal infection (Tb, bartonella 3% in developing countries)
autoimmune component
lump, galactorrhea, inflammation, skin induration/ulceration
nodules on mammo and US
FNA for cytology and organisms

non-infectious complete excision plus oral steroids, anti-inflammatory or colchicine to complete remission; 50% recurrence