Management of Breast Disease: Case Studies

(handouts with patient photos removed)

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Spectrum of Breast Diseases: Benign to Malignant

- Benign breast conditions: breast pain, hypermastia, fibrocystic disease, fibroadenoma, infections, male gynecomastia, ectopic breast tissue, nipple discharge
- Conditions with increased risk of breast cancer: atypical ductal hyperplasia, LCIS, strong family history
- Pre-malignant conditions: DCIS
- Malignant conditions: Invasive breast carcinoma

Benign Breast Conditions

28 y/o female with complaints of intermittent sharp bilateral breast pain, left worse than right

- No significant PMHx, no meds or allergies
- No family h/o cancer
- Clinical breast exam is normal
- On questioning, pain has been present for several months & is sometimes worse before menses

Management of breast pain

- Mastalgia is one of the most common referrals to Breast Clinic; patient is worried that she has cancer
- 2/3rd of women have had “significant breast pain”
- Ensure patient has had appropriate screening (CBE & imaging when indicated)

Breast Cancer Screening

Age	*Breast Cancer Risk*	*Mammography*	*Clinical Breast Exam*	*Breast Self Exam*
20-39	Average	Not needed	Every 3 years	Regular BSE Recommended
20-39	High	Mammography or other imaging may be indicated	Yearly	Regular BSE Recommended
40 and older (while in good health)	Average to High	Yearly	Yearly	Regular BSE Recommended

Management of breast pain

- If clinical breast exam and imaging (when indicated) are negative, reassurance is appropriate
- Reassurance alone resolves pain in 86% with mild pain and 52% with severe pain
- Handout with recommendations, #1 is decreasing fat and caffeine intake
- Teach breast self exam with breast model
- Evening primrose oil, Vitamin E are not better than placebo

Barros, et al; Reassurance in the treatment of mastalgia. Breast J 1999; 5:162.

Management of persistent mastalgia

- Have patients keep a pain chart
- For refractory pain (over 6 months duration), can try drug therapy– danazol works well, but androgenic side effects limit use; or bromocriptine (prolactin inhibitor)
- Tamoxifen is also effective, but is not FDA approved for treatment of mastalgia

35 y/o female referred for “mass in the axilla” that is enlarging

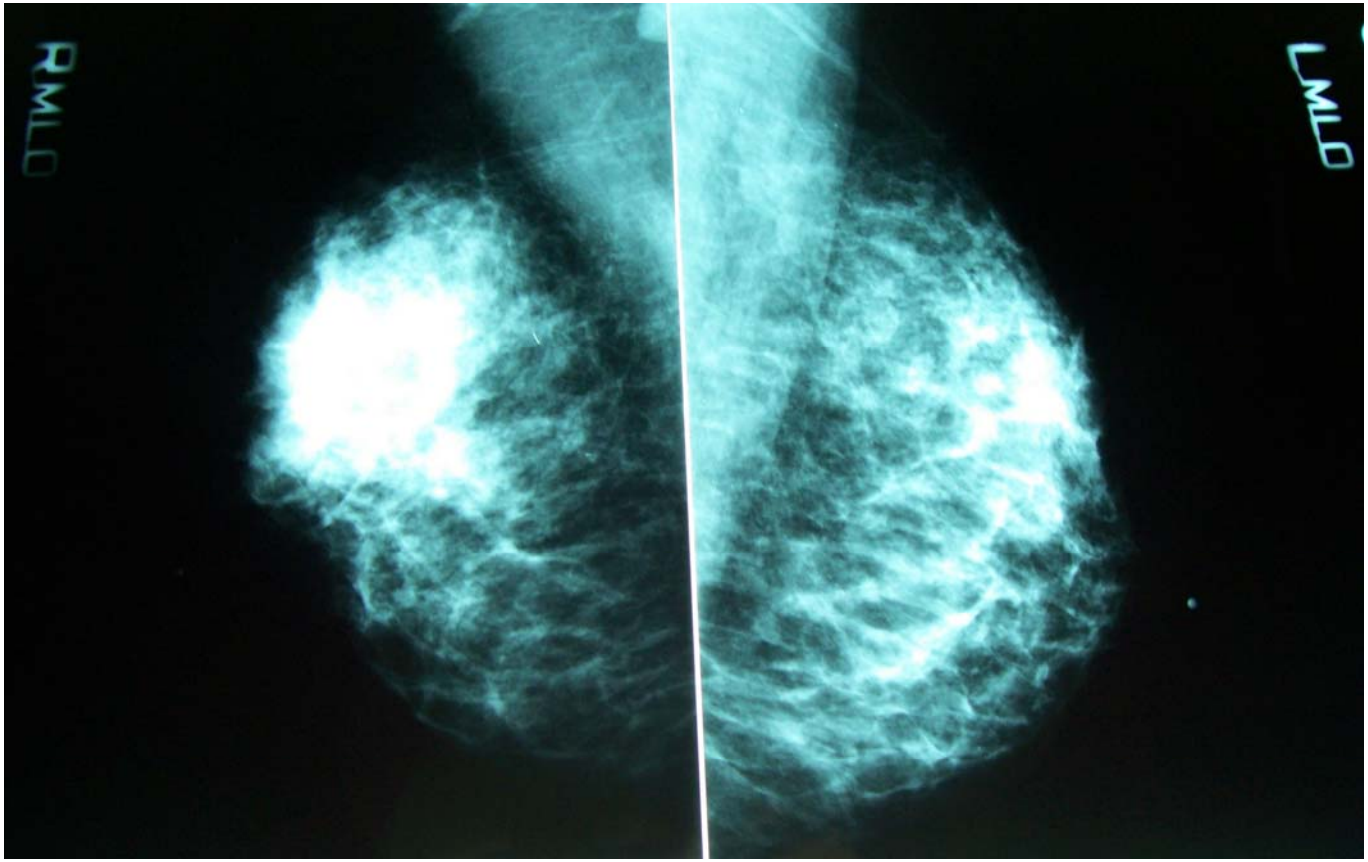
- No significant PMHx, no meds or allergies
- No family hx of cancer
- Primary care provider worried and sent pt for mammograms, which are normal
- Physical exam:

- Extra nipples (polythelia) or extra breasts (polymastia) occurs along the milk line– axilla to pubic region in 1-2 % of the general population
- Ectopic breast tissue may not be apparent until puberty or early pregnancy
- Can cause discomfort after childbearing and may lactate
- Treatment is removal of ectopic tissue with liposuction and excision of supernumerary nipples

32 y/o female presents with large tender mass in the right breast for 2 weeks

- PMHx unremarkle, no FHx of cancer
- G2P2, menses at 12 y/o, no hormone use
- On exam, a 6 x 8 cm irregular, hard, mobile mass is present in the right breast, slightly tender; no adenopathy is noted

Mammogram



Ultrasound

- Ultrasound does not reveal any distinct lesion in area of mass
- Core needle biopsies done of the palpable mass
- Pathology c/w granulomatous mastitis

Management of Granulomatous lobular mastitis

- Presents as firm mass or multiple/recurring abscesses in young parous women
- Treatment is observation: DO NOTHING!
- Excision can result in non-healing wounds!
- Condition usually resolves over time without specific treatment
- Treat abscesses if they arise with aspiration or mini-incision and drainage, culture and treat any specific organisms identified

32 y/o otherwise healthy female complains of severe upper back/neck pain due to large breast size. Surgical indications for breast reduction:

- Chronic neck and upper back pain
- Ulnar paresthesia
- Intertrigo under breasts
- Shoulder grooving or ulceration
- Inability to participate in normal physical activities

43 y/o female presents to Emergency Room c/o right breast mass discovered on BSE

- PMHx: HTN, Type 2 DM, s/p cholecystectomy
- Breast hx: no risk factors identified
- Patient has never had mammogram or CBE (In a study from 2000, only 1/3rd of Native diabetic women living in Phoenix aged 50-69 had ever had a mammogram & less than 1/3rd had ever had a CBE, despite having a co-morbid condition for which they were seeing a healthcare provider!)
- Patient scheduled for mammograms and referred to breast clinic

Giroux et al. Low National Breast and Cervical Cancer-Screening Rates in American Indian and Alaska Native Women with Diabetes. JABFP. 2000;13:239-245

Mammogram: smooth round density, rec. ultrasound (BIRADS 0)

Ultrasound: lesion is solid, wider than tall, isoechoic (BIRADS 3)

Breast Imaging Reporting and Data System (BIRADS)

BIRADS	*What it means…*
0	**Assessment incomplete (need to review prior studies or obtain additional imaging)**
1	**Normal mammogram, continue routine screening**
2	**Benign finding, continue routine screening**
3	**Probably benign finding, rec. short term interval follow-up in 6 months**
4	**Suspicious abnormality, rec. biopsy**
5	**Highly suspicious for malignancy, rec. biopsy**
6	**Known biopsy-proven malignancy**

Physical exam in breast clinic reveals a smooth, mobile 2 cm mass in the right breast.

- Imaging and exam are c/w fibroadenoma, but a solid breast mass in a patient over 40 (or other risk factors) needs tissue diagnosis to safely observe

Core biopsy confirms diagnosis of fibroadenoma, options of excision versus observation discussed with patient

Benign lesions can often be completely removed with image guided vacuum assisted biopsy; or excisional biopsy with periareolar incision

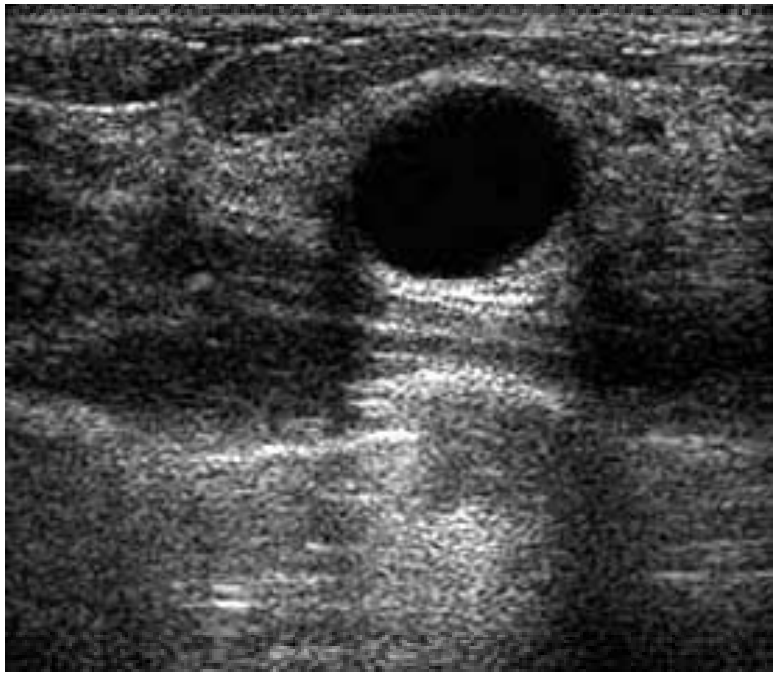
Patient opts for excision; lesion is excised completely under ultrasound guidance with vacuum assisted device

52 y/o female c/o an enlarging tender mass in her left breast

Physical exam with 3 cm tender mass palpable in left breast; mammogram shows left breast mass; & ultrasound c/w simple cyst

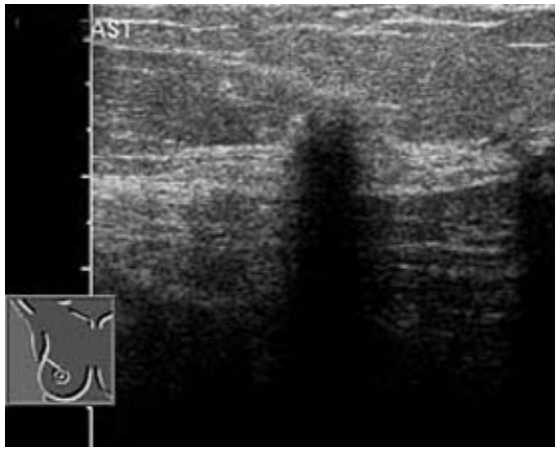
- Cysts may wax and wane with menstrual cycle and are common in peri-menopausal women
- Cysts in post-menopausal women not on HRT are suspicious
- Treatment: Simple cysts can be safely observed, aspiration only needed for symptom relief
- Routine cytology of cyst fluid is not indicated

Ultrasound



Cyst: anechoic, well-circumscribed, enhanced through-transmission with thin edge shadows

Vs.



Cancer: posterior shadowing, irregular border

Treatment: aspiration & inspection of cyst fluid:

Cyst is aspirated under ultrasound guidance and resolves completely; cyst fluid (greenish and turbid) discarded

Biopsy is indicated if:

- Aspirated fluid is bloody
- Cyst does not resolve completely on ultrasound or exam with aspiration
- Same cyst recurs several times in short period– have patient follow up in 6 weeks after aspiration to confirm cyst does not recur

38 y/o female with a 5 year h/o bloody nipple discharge

- PMHx unremarkable; no FHx of cancer; Mammograms are normal
- Physical exam reveals no masses, no adenopathy, expressible bloody discharge present from right nipple

Benign nipple discharge

- In 2/3rd of non-lactating women fluid can be expressed from the nipple ducts
- Physiologic secretions can be white, yellow, green, brown; may be from multiple ducts and vary in color
- Blood in nipple discharge during pregnancy or lactation is benign, probably due to hypervascularity of developing breast tissue

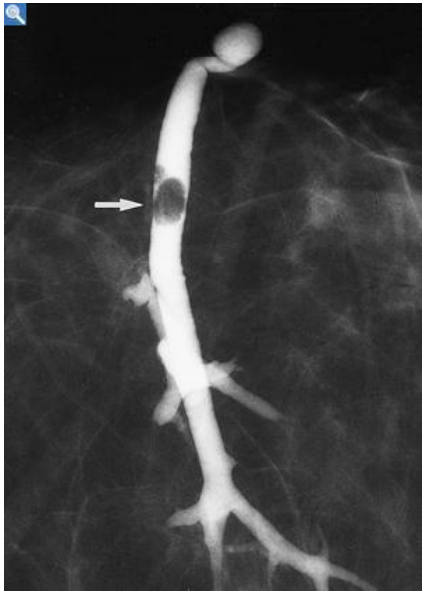
Galactorrhea

- Galactorrhea is *copious bilateral* milky discharge not associated with pregnancy or lactation
- Careful drug history for drugs such as OCPs, antihypertensives, or psychotropic agents that can cause hyperprolactinemia
- Elevated blood prolactin levels without drug cause should prompt evaluation for pituitary tumor

Nipple discharge

- Clear/serous or Bloody nipple discharge are only indications for galactography
- Greenish, grayish, TURBID = benign
- Straw colored, CLEAR ~ 6 % malignant
- BLOODY ~ 13 % malignant

Galactography shows a single filling defect; surgical excision of the duct reveals a benign papilloma



23 y/o female referred to breast clinic for c/o itchy nipples x 4 months

PMHx unremarkable, primary care provider sends patient with referral "R/O Paget's disease"

Physical exam:

Paget’s disease

- Eczema-like patch of irritated skin *starts at the nipple* and can spread onto areola
- Very rarely bilateral
- Will not improve with local treatment such as steriod creams
- Paget’s is almost always a sign of an underlying malignancy, and treatment is that of the underlying disorder

Management

- CBE and imaging when indicated; if positive, work up of any abnormality
- If CBE and imaging negative, trial of steroid cream/ointment
- If fails local treatment, or lesion is suspicious (unilateral, starts at nipple), punch biopsy skin lesion

This patient has eczema and improved with local treatment

Conditions with increased risk of breast cancer

42 y/o female referred to breast clinic due to strong concerns about her risk of getting breast cancer

- PMHx: G1P1, age at 1st pregnancy 32; 1st menses at 13
- PSHx: 5 prior breast biopsies over last 8 years, one with atypical ductal hyperplasia
- FHx: sister with breast cancer at age 43
- Pt was placed on tamoxifen after biopsy with atypical ductal hyperplasia, but was unable to tolerate the side effects and discontinued therapy

RISK FACTOR	RELATIVE INCREASE IN RISK
Mother/sister/daughter with breast cancer	2 X
2 first degree relatives with breast cancer	5 X
Personal history of breast cancer	3-4 X
Prior biopsy with atypical hyperplasia	4-5 X
Alcohol 2-5 drinks per day	1.5 X
Obesity	Increased risk
Early menses ($\leq$12)or late menopause($\geq$55)	Slightly increased risk
Nulliparous or 1st child after age 30	Slightly increased risk
HRT w/ estrogen and progesterone	Increased risk goes back to baseline 5 years after discontinuing tx

Lifetime risk is 1 in 8; but varies by age:

Decade of life	Risk of breast cancer
30-39	0.43 % (1 in 233)
40-49	1.44 % (1 in 69)
50-59	2.63 % (1 in 38)
60-69	3.65 % (1 in 27)

NCI Website www.cancer.gov

Breast Cancer Risk Assessment Tool: Gail model

- Medical hx (age, number of prior breast biopsies, presence of atypical hyperplasia)
- Reproductive hx (age at 1st menses, age of 1st live birth)
- Family hx (breast cancer in a mother, sister or daughter)
- Calculates 5 year and lifetime risk compared to general population

Breast Cancer Risk Assessment Tool: Gail model

- May underestimate risk for some minority groups!

- Risk Calculator is available on the NCI website: www. Cancer.gov/bcrisktool

Genetic counseling

- Genetic counseling session estimates patients' probability of an inherited susceptibility, proceeding with genetic testing is then their choice
- Indications for referral:

✓ Relative on *maternal or paternal* side of family with breast cancer under age 50

✓ Breast and ovarian cancer in the family, esp. in the same individual

✓ Male breast cancer in the family

✓ Ashkenazi Jewish heritage

An inherited susceptibility accounts for only 5-10 % of breast cancers

Cancer type	*Risk in BRCA 1 or 2 Carriers (Lifetime to age 70)*	*General Population Risk (Lifetime to age 70)*
Breast	**40-85 %**	**8 %**
Contralateral Breast	**40-65 %**	**2-11 %**
Ovarian	**BRCA 1: 25-65 %** **BRCA 2: 15-25 %**	**1 %**
Prostate	**BRCA 1: Elevated** **BRCA 2: 19 %**	**8 %**
Male breast	**6-7 % (<10%)**	**0.1 %**
Pancreatic	**3-7 % (< 10%)**	**0.4 %**

Treatment options for high risk patients

- Close follow-up
- Chemoprevention

✓ selective estrogen receptor modulators (SERM) such as tamoxifen

✓ Consider in women with 1.66% 5-year projected risk or higher

- Prophylactic bilateral mastectomy

✓ Still need to follow yearly with CBE

✓ Reduces risk by 90%

Breast MRI: ACS Guidelines for screening breast MRI

- <u>Recommended (evidence based/expert consensus)</u>

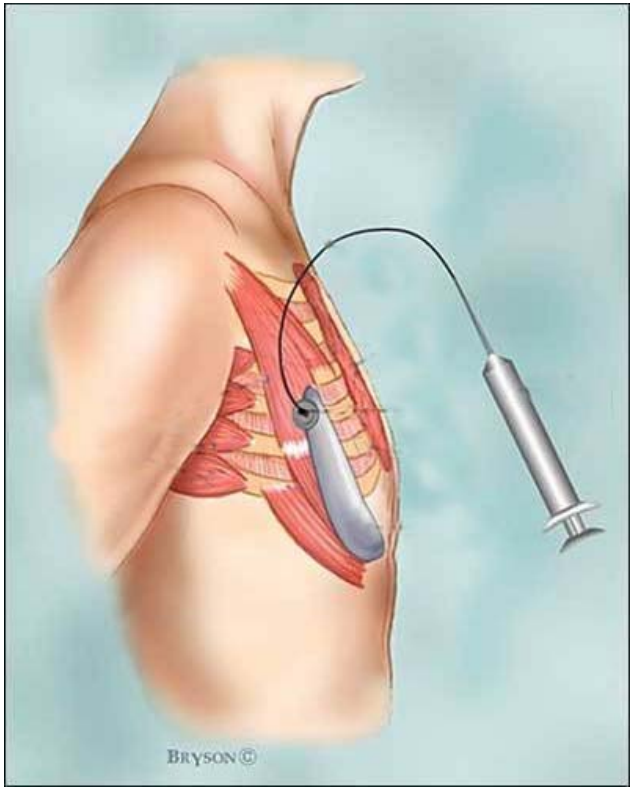
✓ BRCA +
✓ 1st degree relative with BRCA, but untested
✓ > 25% lifetime risk (by any risk model)
✓ RT to chest (between 10-30 y/o, dose > 4 Gy)

- <u>Insufficient evidence for/against</u>

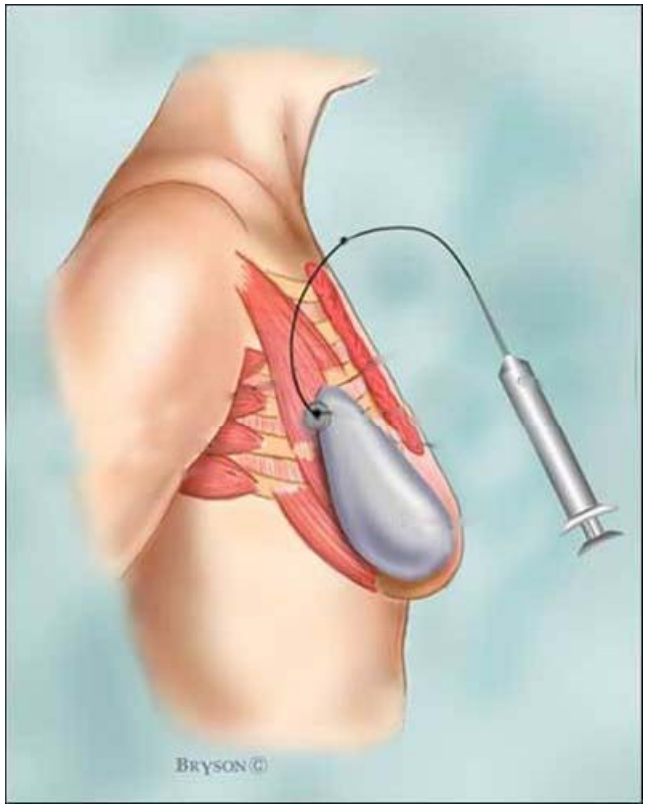
✓ LCIS/ALH/ADH
✓ Very dense breasts
✓ Personal hx of breast cancer

- <u>Not recommended</u>: lifetime risk < 15%

This patient chose bilateral prophylactic mastectomies with immediate reconstruction, due to her very high anxiety level



Tissue expanders placed under pectoralis muscle



Tissue expanders slowly filled with saline every 1-2 weeks

43 y/o female presents with a tender fibroadenoma that has been followed for several years, she feels the lesion is enlarging and desires excision

- Fibroadenoma is excised and is benign, but pathologist notes lobular carcinoma in situ in the surrounding breast tissue

Lobular neoplasia: LCIS and ALH

- Risk indicator for subsequent carcinoma—not a precursor lesion like DCIS!
- Not associated with mass or calcifications– diagnosis usually made as incidental finding
- Usually multi-focal and bilateral:

✓ >50% have multiple foci in ipsilateral breast

✓ > 30% have LCIS in the contralateral breast

Management

- Careful discussion with patient regarding increased risk for breast cancer (*in either breast*): relative risk 8-10 x general population (lifetime risk of 30-40%)

- Options:
  - Observation (breast cancer developed in 16%; breast cancer mortality in 2.8%
  - Chemoprevention with tamoxifen reduces incidence of breast cancer by 50% (NSABP P-01)
  - Prophylactic bilateral mastectomy (breast cancer mortality 0.9%-- does not reduce risk to 0!)

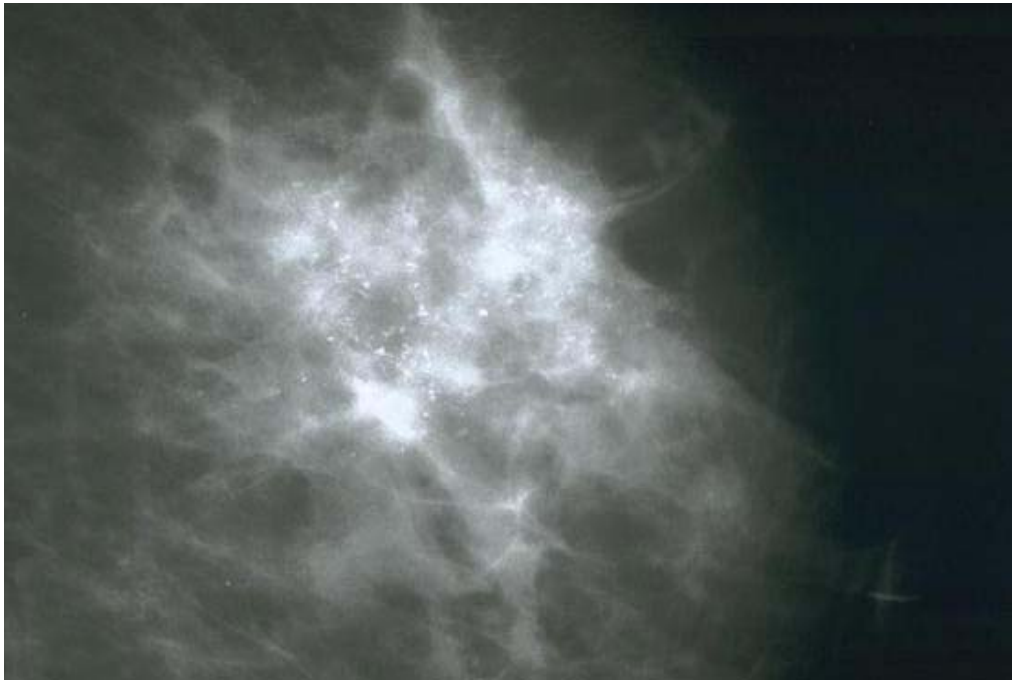
Bradley et. al., Alternatives in the surgical management of in situ breast cancer: a meta-analysis of outcome; Am Surg 1990; 56:428-432

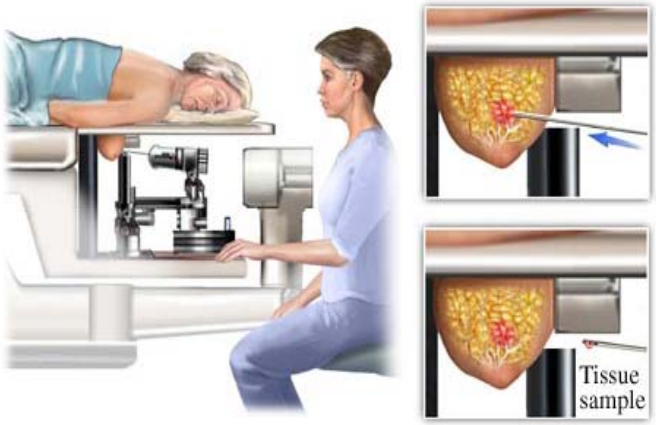
Pre-malignant conditions

62 y/o female referred for abnormal screening mammogram

- PMHx: HTN and diet controlled diabetes; pt has taken HRT x 12 years
- FHx: sister with breast cancer at age 70
- Exam: no palpable mass, no adenopathy
- Mammograms with cluster of microcalcifications in the left breast, BIRADS 4

Mammogram with clustered microcalcifications





Patient sent for stereotactic biopsy which reveals ductal carcinoma in situ, ER+

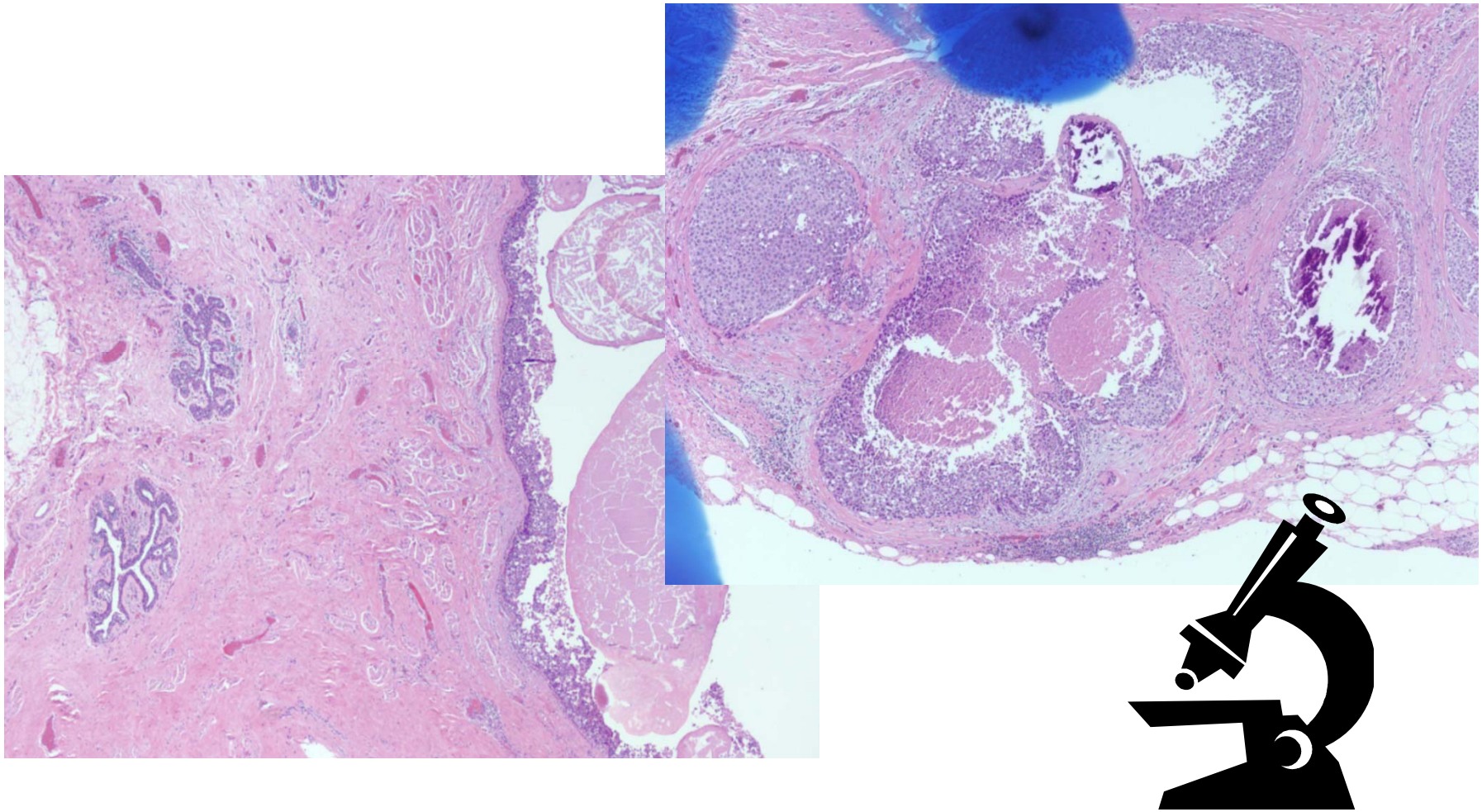
Management DCIS

- DCIS is probably a precursor to invasive cancer
- Excision alone has a local recurrence rate of 20% over 5-10 years; half of recurrences are invasive carcinomas
- Wide excision + XRT + Tamoxifen (in ER+ tumors) reduces local recurrence rate to 7.7%; 2.6% invasive cancers (NSABP B-24)
- Mastectomy reduces local recurrence rate to 1-2%

Management of DCIS

- Mastectomy is very effective, but considered a radical approach for a lesion that may not progress to invasive cancer in patient's lifetime
- Options discussed with patient, and she would like to try breast conservation therapy; scheduled for lumpectomy with plans for XRT post-op and 5 years of tamoxifen

Lumpectomy: extensive DCIS less than 1 mm from margins



Management: Patient offered re-excision lumpectomy or mastectomy; she opts for mastectomy and then delayed reconstruction

Healed after mastectomy

One year after left mastopexy, right implant reconstruction

Long term follow up

- Stop HRT
- History and clinical exam every 3-6 months for 3 years, then every 6-12 months for 2 years, then annually
- Monthly BSE
- Mammography annually
- Tamoxifen x 5 years

Selective estrogen receptor modulator agents

- Use of tamoxifen becoming wide-spread with indications for chemoprevention in high risk patients, DCIS, and after invasive breast cancer in pre-menopausal women (ER+)
- Side effects of tamoxifen:

✓ Endometrial cancer—2.5 x increased risk

✓ Venous thromboembolic events (most occur w/ major surgery or long term immobility– consider stopping tamoxifen for these)

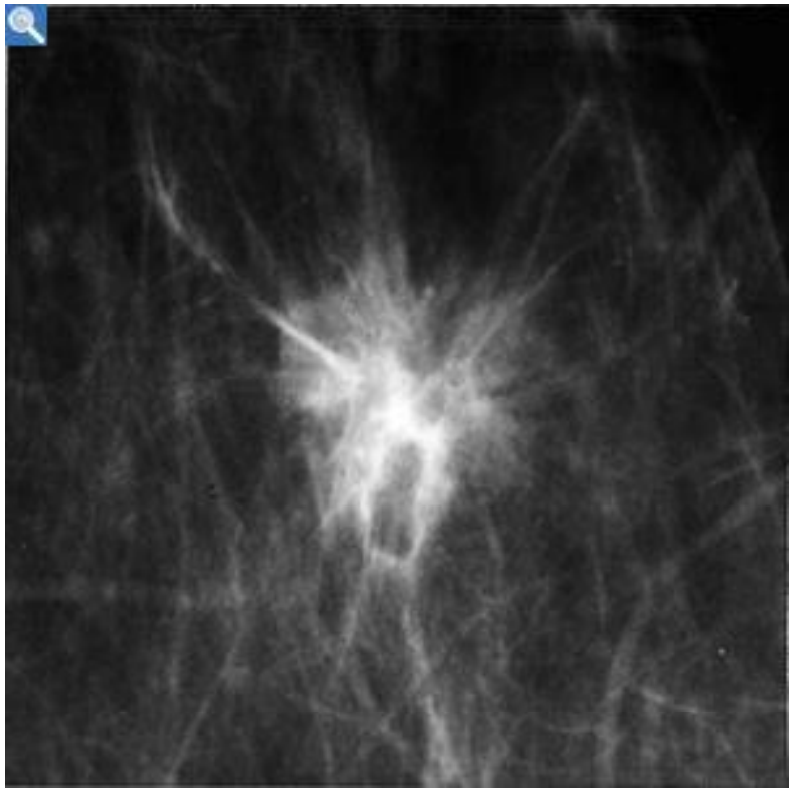
✓ Quality of life: hot flashes, vaginal dryness

Breast cancer cases

60 y/o female referred with new left breast mass on screening mammogram

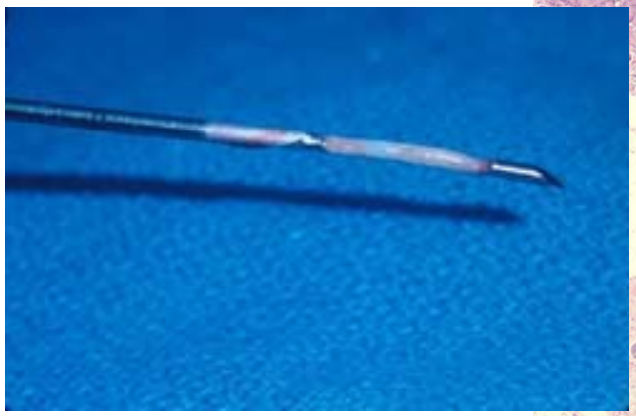
- PMHx well-controlled type 2 DM and mild HTN; last mammogram 4 years prior
- No FHx of cancer
- Physical exam reveals ~2 cm palpable ill-defined mass in the left breast, no adenopathy

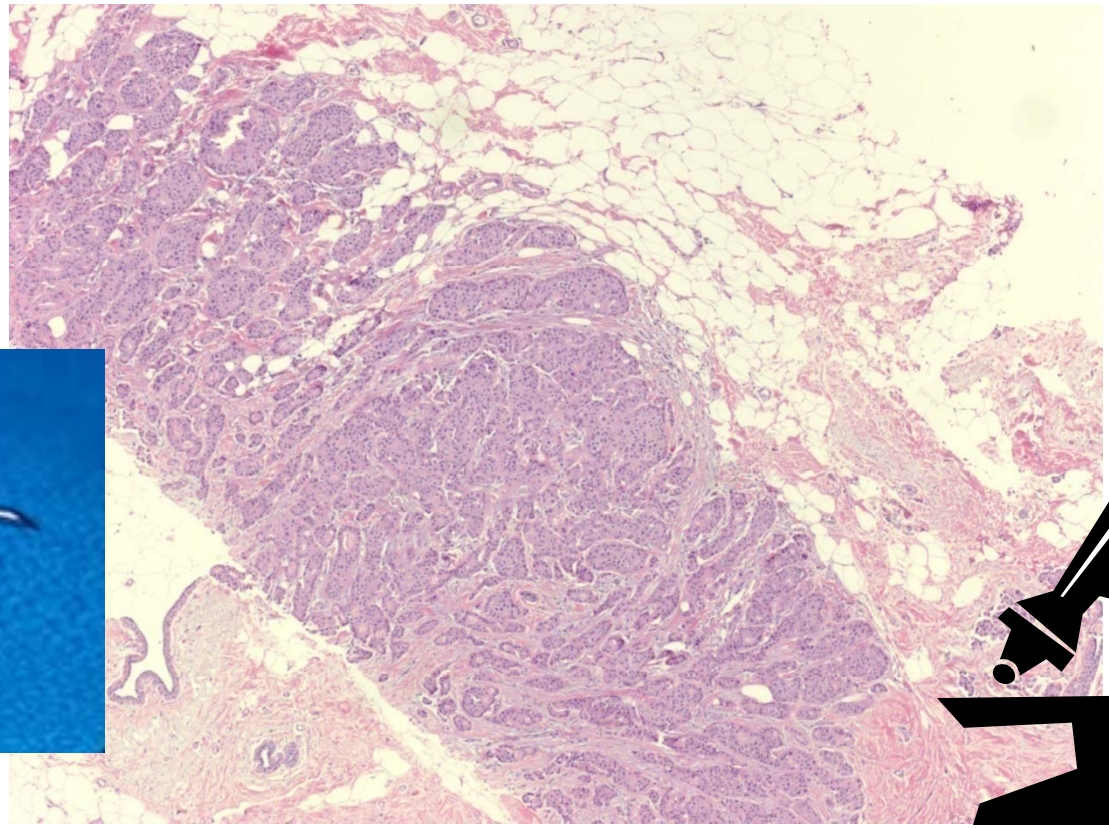
Mammogram:



Spiculated mass left breast, 2 cm, BIRADS 4

- Core biopsy of lesion done in clinic under ultrasound guidance
- Pathology reveals an infiltrating ductal carcinoma





Why needle biopsy first for tissue diagnosis?

- Most biopsies are benign– needle biopsy does not leave a scar or cosmetic deformity for benign disease
- Patient can make an informed choice of surgery– BCT or mastectomy for malignancy
- Does not disrupt lymphatics for sentinel lymph node biopsy
- If lesion is large, neoadjuvant chemotherapy can shrink the tumor and often make BCT possible

Local Management

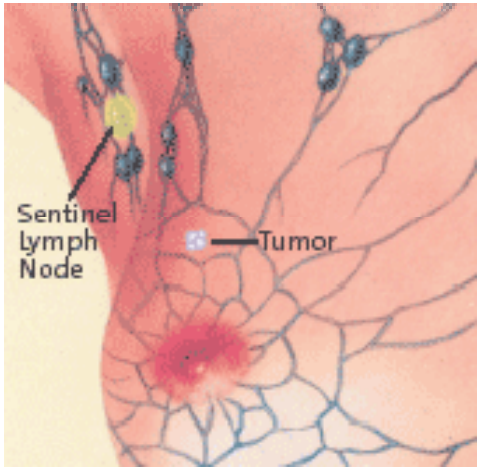
- Discuss surgical options with patient: lumpectomy and radiation (BCT) vs. mastectomy
- **BCT and RT has EQUIVALENT LONG TERM SURVIVAL vs. mastectomy** (over 20 years of follow up NSABP 06, Milan I trials)
- Local recurrence 10% after mastectomy vs. 14% after BCT and RT (NSABP 06)

Contraindications for BCT

- 2 or more tumors in different quadrants of the breast, or diffuse malignant calcifications
- Prior breast irradiation that, if combined with proposed RT, would be excessive RT dose
- Pregnancy (may be able to do BCT in 3rd trimester and do RT post delivery)
- Persistent positive margins of resection

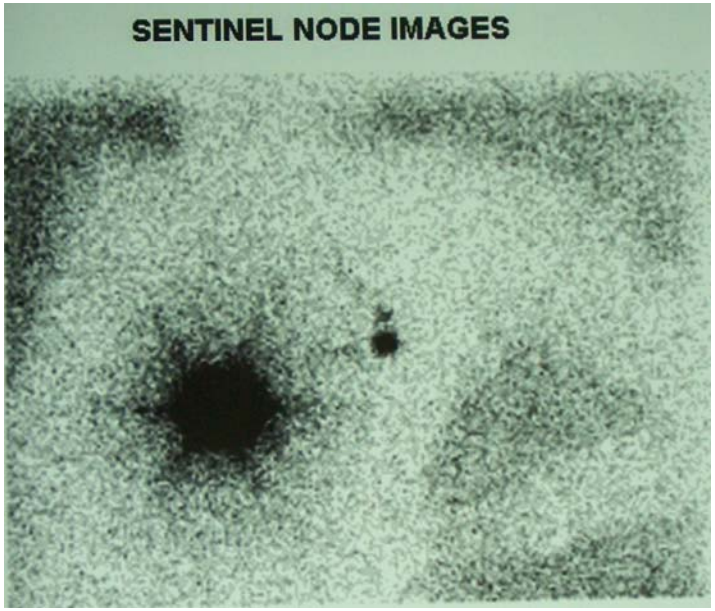
Patient chooses BCT and undergoes lumpectomy with sentinel lymph node biopsy

- Sentinel lymph node biopsy is the standard of care for management of the axilla
- Instead of complete axillary dissection on all patients with invasive breast cancer, the sentinel lymph nodes are sampled at the time of lumpectomy or mastectomy
- If the sentinel nodes are positive, a complete axillary dissection is done



Sentinel lymph node biopsy

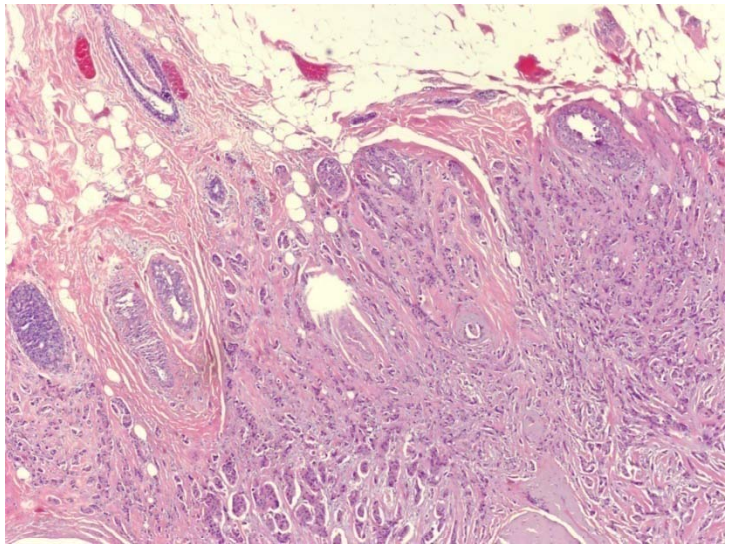
- Peritumoral or subareolar injection of radioactive sulfur colloid the morning of surgery or the day prior to surgery
- Lymphoscintigraphy 2 hours later

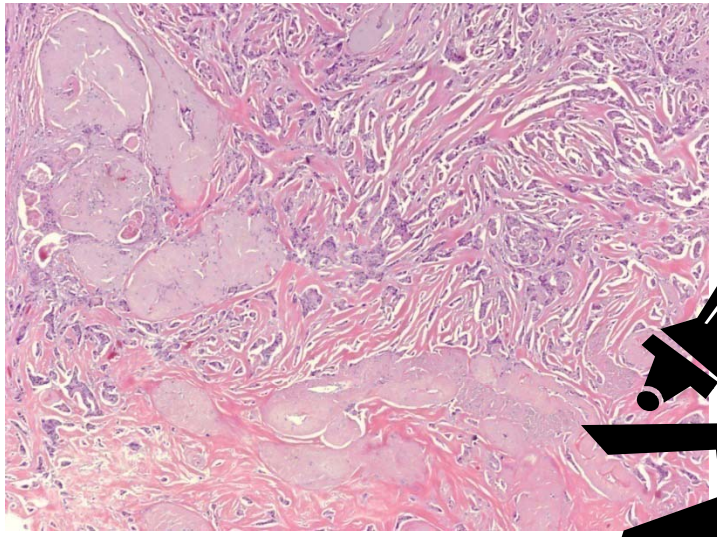


Sentinel lymph node biopsy

- Injection of blue dye at time of surgery
- Locate the sentinel node, blue and/or radioactive with hand held gamma probe

Pathology





- 2.2 cm invasive ductal carcinoma, grade 2
- 2 sentinel nodes negative
- ER 90%, PR 80% positive (favorable)
- HER-2 neu negative (favorable)

Shared Decision Making

Name: _____ (Breast Cancer)
Age: 60 General Health: Good

Estrogen Receptor Status: Positive Histologic Grade: 2
Tumor Size: 2.1 - 3.0 cm Nodes Involved: 0
Chemotherapy Regimen: CMF-Like (Overview 2000)

Decision: No Additional Therapy

76 out of 100 women are alive in 10 years.
16 out of 100 women die because of cancer.
8 out of 100 women die of other causes.

Decision: Hormonal Therapy

5 out of 100 women are alive because of therapy.

Decision: Chemotherapy

1 out of 100 women are alive because of therapy.

Decision: Combined Therapy

6 out of 100 women are alive because of therapy.

Shared Decision Making

Name: _____ (Breast Cancer)
Age: 60 General Health: Good

Estrogen Receptor Status: Positive Histologic Grade: 2
Tumor Size: 2.1 - 3.0 cm Nodes Involved: 0
Chemotherapy Regimen: CMF-Like (Overview 2000)

Decision: No Additional Therapy

57 out of 100 women are alive and without cancer in 10 years.
36 out of 100 women relapse.
7 out of 100 women die of other causes.

Decision: Hormonal Therapy

12 out of 100 women are alive and without cancer because of therapy.

Decision: Chemotherapy

3 out of 100 women are alive and without cancer because of therapy.

Decision: Combined Therapy

14 out of 100 women are alive and without cancer because of therapy.

www.adjuvantonline

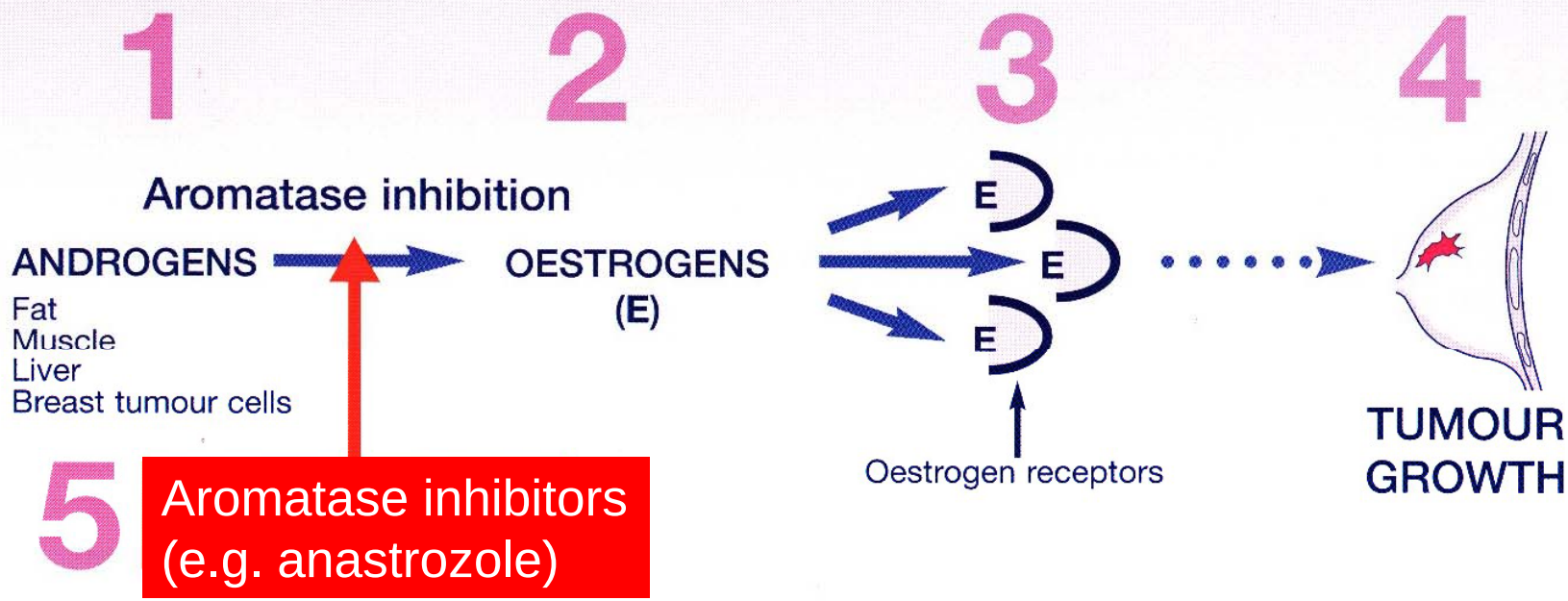
Patient does not want chemotherapy; is referred for RT, then treated with 5 years of adjuvant endocrine therapy

- Radiation therapy to breast given 5 days per week for about 6 weeks

Aromatase inhibitors (AI)

- ATAC trial (Arimidex, Tamoxifen, Alone or in Combination): Anastrozole modestly superior to tamoxifen for reducing local, distant recurrences and substantially reduces contralateral breast cancers
- Adjuvant endocrine therapy for post-menopausal women
- Side effects of AI: hot flashes, musculoskeletal, and bone loss/fractures (may need bisphosphonate)

Mode of Action of aromatase inhibitors

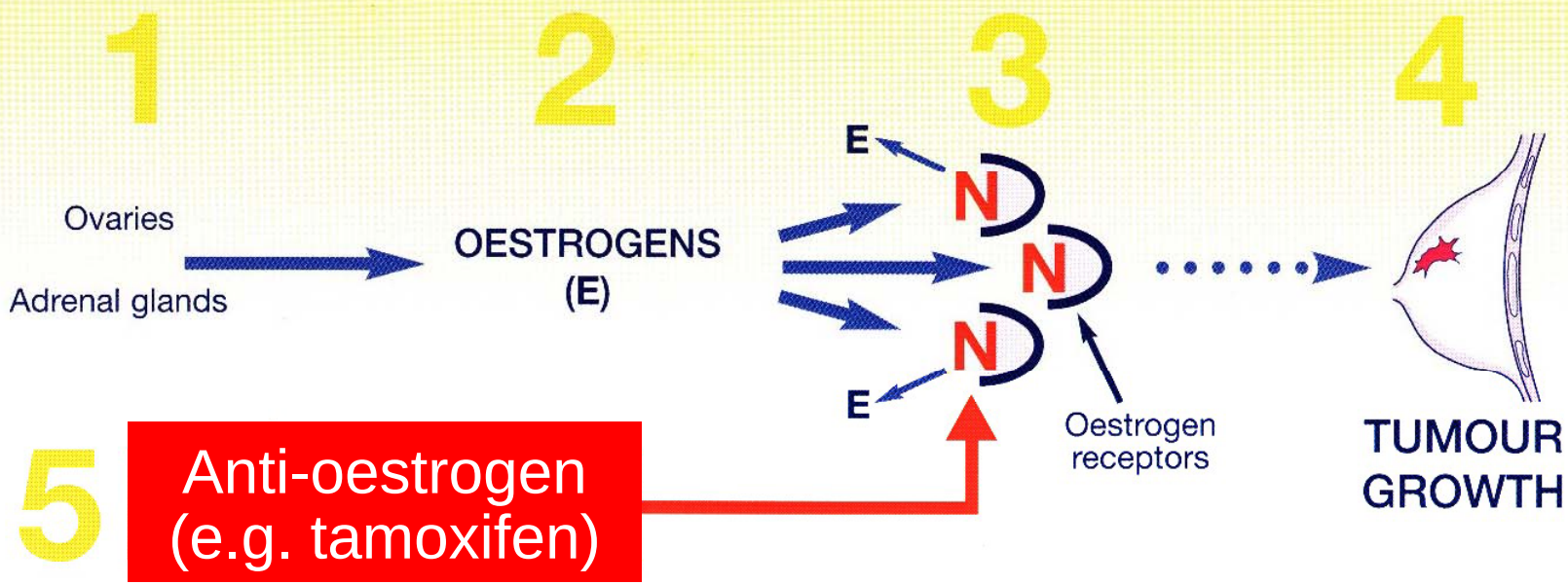


In postmenopausal women, oestrogens are produced from androgens via the aromatase enzyme complex in peripheral tissues such as liver, fat and muscle and breast tumour cells (**1**)

Oestrogens (**2**) stimulate tumour growth (**4**) within the breast tumour cell via oestrogen receptors (**3**)

Selective inhibition of aromatase by 'Arimidex' (**5**) suppresses the formation of oestrogens and hence reduces the stimulatory effect of oestrogens on breast tumours

Mode of action of anti-oestrogens



Oestrogens are produced via the ovaries and the adrenal glands (**1**)

Oestrogens (**2**) bind to oestrogen receptors in the breast (**3**)

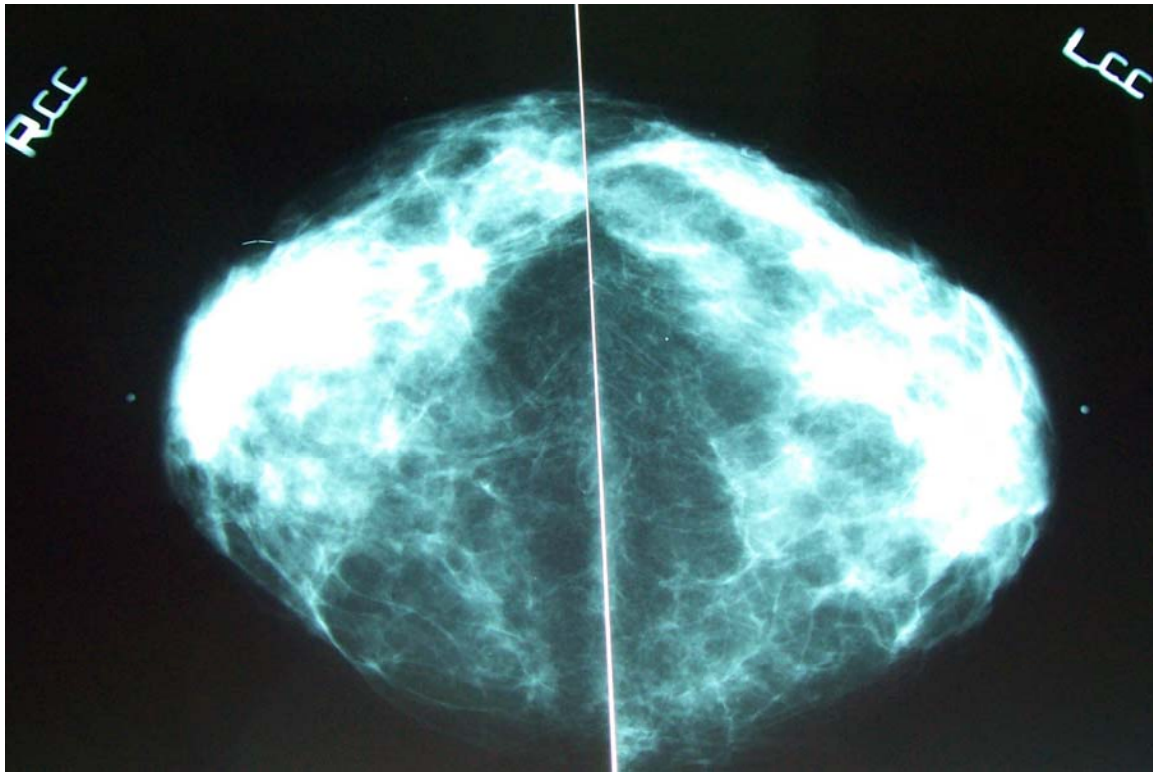
The receptor-hormone complex ultimately triggers growth within the breast tumour cell (**4**)

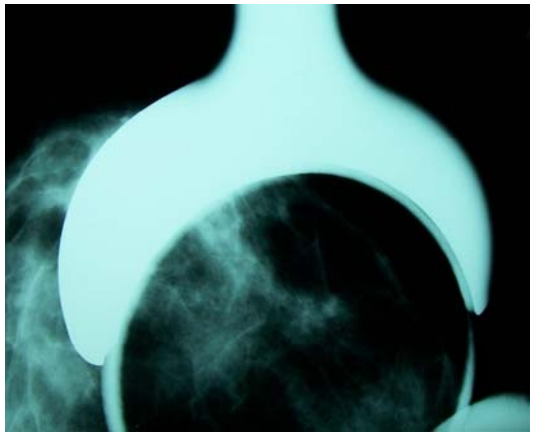
'Nolvadex' (**5**) competitively inhibits binding of oestradiol to the oestrogen receptor and limits tumour growth

Long term follow up

- Stop HRT
- History and clinical exam every 3-6 months for 3 years, then every 6-12 months for 2 years, then annually
- Monthly BSE
- Mammography annually
- Aromatase inhibitor (AI) x 5 years

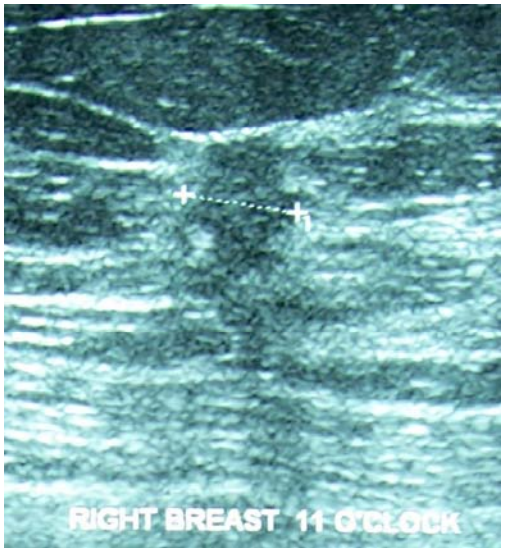
42 y/o pre-menopausal female referred for abnormal mammo:





- PMHx negative, no FHx cancer
- PE: no palpable mass, no adenopathy

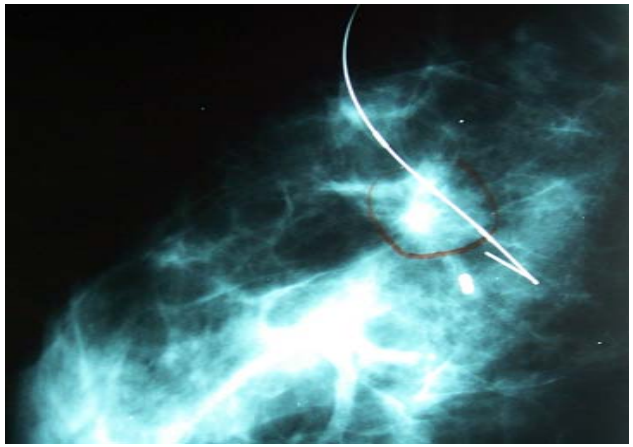
Ultrasound guided biospy

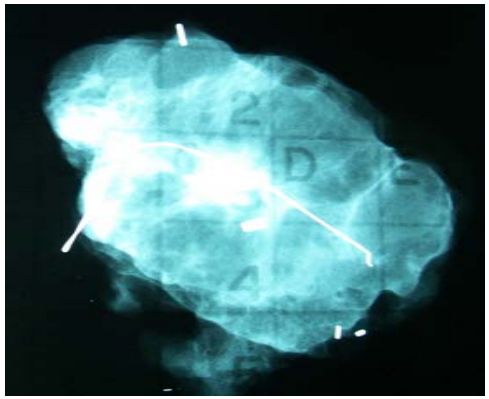


Ill defined lesion on ultrasound with posterior shadowing

- Invasive ductal carcinoma
- Options of BCT and RT vs. mastectomy for local management discussed with patient, she opts for BCT

Patient undergoes needle localized lumpectomy and sentinel lymph node biopsy





- Pathology Invasive ductal carcinoma, grade 2, ER/PR positive, HER 2 negative
- Maximal tumor diameter 1.2 cm
- 1 sentinel lymph node negative for tumor

Results discussed with patient; she is very concerned about the toxicity of chemotherapy

- Generally, premenopausal patients with tumor size greater than 1 cm are recommended to have chemotherapy
- New tests may help stratify tumors into risk categories and determine who will benefit most from chemo
- Testing is expensive—only use if it will change the management!

Oncotype dx

- Premenopausal women with Stage I or II breast cancer (node negative), ER +, that will be treated with Tamoxifen
- Molecular testing of tumor gives a score—low, intermediate, or high risk for distant recurrence (metastatic disease)
- The 25% of women with high scores derive a much larger benefit from chemotherapy than 50% with low recurrence scores

Shared Decision Making

Low

Name: _____ (Breast Cancer)
Age: 42 General Health: Excellent
Initial tumor characteristics:
Estrogen Receptor Status: Positive Nodes Involved: 0
Recurrence Score: 10
Chemotherapy Regimen: CA * 4 then T * 4

Decision: Only Hormonal Therapy

- 92 out of 100 women are alive and without recurrence in 10 years.
- 6 out of 100 women develop recurrence in 10 years.
- 2 out of 100 women die of other causes in 10 years.

Decision: Hormonal Plus Chemotherapy

- 92 out of 100 women are alive and without recurrence in 10 years. Plus...
- 3 out of 100 women are alive and without recurrence because of therapy.
- 3 out of 100 women develop recurrence in 10 years.
- 2 out of 100 women die of other causes in 10 years.

To develop recurrence means to develop metastatic breast cancer, the most serious type of recurrence. These estimates do not include the estimates of the risk of developing local recurrence or a second breast cancer in the other breast.

Vs.

Shared Decision Making

High

Name: _____ (Breast Cancer)
Age: 42 General Health: Excellent
Initial tumor characteristics:
Estrogen Receptor Status: Positive Nodes Involved: 0
Recurrence Score: 51
Chemotherapy Regimen: CA * 4 then T * 4

Decision: Only Hormonal Therapy

- 65 out of 100 women are alive and without recurrence in 10 years.
- 34 out of 100 women develop recurrence in 10 years.
- 1 out of 100 women die of other causes in 10 years.

Decision: Hormonal Plus Chemotherapy

- 65 out of 100 women are alive and without recurrence in 10 years. Plus...
- 13 out of 100 women are alive and without recurrence because of therapy.
- 21 out of 100 women develop recurrence in 10 years.
- 1 out of 100 women die of other causes in 10 years.

To develop recurrence means to develop metastatic breast cancer, the most serious type of recurrence. These estimates do not include the estimates of the risk of developing local recurrence or a second breast cancer in the other breast.

www.adjuvantonline Genomic version

Breast cancer staging

Primary Tumor	*Definitions*
Tis	**Carcinoma *in situ***
T0	**No evidence of primary tumor**
T1	**Tumor 2 cm or less**
T2	**Tumor > 2 cm, < 5 cm**
T3	**Tumor more than 5 cm**
T4	**Any size tumor with direct extension into chest wall or skin; inflammatory carcinoma**
Regional Nodes	
N0	**No regional lymph node metastasis**
N1	**Metastasis in 1-3 axillary lymph nodes**
N2	**Metastasis in 4-9 axillary lymph nodes**
N3	**Metastasis in 10 or more axillary lymph nodes, Ipsilateral supraclavicular lymph nodes**
Distant Mets	
M0	**No distant metastasis**
M1	**Distant metastasis**

Breast cancer staging

Stage	*Definition*	*5 year Relative Survival Rate*
0	**Tis N0 M0**	**100 %**
I	**T1 N0 M0**	**100 %**
IIA	**T0-1 N1 M0** **T2 N0 M0**	**92 %**
IIB	**T2 N1 M0** **T3 N0 M0**	**81 %**
IIIA	**T0-2 N2 M0** **T3 N1-2 M0**	**67 %**
IIIB	**T4 N0-2 M0**	**54 %**
IV	**anyT any N M1**	**20 %**

Long term follow up

- History and clinical exam every 3-6 months for 3 years, then every 6-12 months for 2 years, then annually
- Monthly BSE
- Mammography annually
- Tamoxifen x 5 years

Summary

- Most breast disease is benign!!
- Making the diagnosis in the least invasive manner preserves options for the patient in cases of cancer and preserves cosmesis in benign disease