Lumps, Bumps, Leaking and Pain
Management of Breast Conditions

Rebecca A. Jackson, MD
Professor Department of Obstetrics, Gynecology
and Reproductive Sciences
University of California, San Francisco
I HAVE NO DISCLOSURES
Plan

- Palpable breast mass
- Non-Palpable breast mass
- Mastalgia
- Nipple Discharge
- Mastitis
Gallup Poll: Leading Causes of Death in Women

**Perceived**
- Breast CA: 38%
- Other: 17%
- Ovarian Ca: 9%
- Other Ca: 13%
- Lung Dz's: 1%
- Lung Ca: 2%
- Heart Dz: 18%

**Actual**
- Heart Dz: 36%
- Other: 29%
- Ovarian Ca: 2%
- Other Ca: 13%
- Lung Dz's: 9%
- Lung Ca: 6%
Failure to diagnose breast cancer in a timely manner is a leading cause of malpractice claims.

Common reasons:
- Unimpressive physical findings
- Failure to f/u with pt
- Palpable mass with negative mammo
Likelihood of Cancer in Dominant Breast Mass by Age

Of all discrete breast masses, about 10% are cancerous. (In contrast, 8% of abnormal mammos = cancer)
“Dominant Mass”? 

- **Discrete or dominant mass** = stands out from adjoining breast tissue, definable borders, is measurable, not bilateral.

- **Nodularity or thickening** = ill-defined, often bilateral, fluctuates with menstrual cycle

- In women <40 referred for mass, only 1/3 had confirmed dominant mass
Breast Mass: Diagnostic Options

- Physical exam
- Ultrasound
- Mammogram
- Cyst aspiration
- Fine needle aspiration
- Core needle biopsy
- Excisional biopsy
Question 1

A 42 yr old woman with no family or personal history of breast cancer has found a breast lump. She doesn’t know how long it has been there. It is not painful.

On exam, it is a discrete mass, 2 cm, relatively smooth, mobile and non-tender. She has no axillary lymphadenopathy.

What is your next step?
Q1: Palpable mass in 42 yo

A. Nothing now. Re-examine in 1-2 months
B. Ultrasound
C. Mammography
D. Office aspiration
E. FNAB
F. Core biopsy
Q1b: Palpable mass in 42 yo
A mammography was chosen and is negative. Next step (pick one)?

A. Re-examine in 1-2 months
B. F/u 1 year for annual exam
C. Ultrasound
D. Office aspiration
E. FNAB
F. Core biopsy
Q1c: Palpable mass in 42 yo
An ultrasound was chosen as the first step. It shows a cystic mass. Next step?

A. Re-examine in 1-2 months
B. F/u 1 year for annual exam
C. Office aspiration
D. FNA
E. Core biopsy
Step 1: Palpable Breast Mass

- **Determine if mass is cystic or solid**
- Simple cysts are benign and don’t require further evaluation
- 20-25% of palpable masses are simple cysts, most occurring in 40-49 yo’s
- **Options?**: Ultrasound, office aspiration, FNA, core needle biopsy
Breast Exam

- Nether sensitive (50-60%) nor specific (60-90%) (even when done by experts)
- Cannot reliably distinguish cyst from solid
- Nonetheless, it is important for determining if mass is discrete (vs nodularity or thickening), is a necessary adjunct to mammogram and is required for follow-up of masses
- Perform in 2 positions, methodical, spirals or strips
- Mark mass prior to biopsy so others can find it
Ultrasound

- **Primary Use**: Classify mass as cystic or solid
- Guidance for cyst aspiration or biopsy
- Adjunct to evaluate symmetric densities detected by mammography
- Can be the first test performed & if cyst is confirmed—the only test required
Fibroadenoma: Well-circumscribed, superficial
Cancer: Irregular, deep
Cyst: Anechoic, well-circumscribed,

Ultrasound is 98-100% accurate for diagnosis of simple cysts. However, for solid masses, it cannot reliably distinguish benign from malignant.
Cyst Aspiration

- **Simple office procedure**: 20-23 gauge needle and syringe, ultrasound guidance optional, specialized training not necessary
- **Primary Use**: Confirm mass is cystic
- **Secondary use**: Relieve pain/pressure due to symptomatic cyst
- **Benefits**: If cystic fluid obtained, establishes immediate diagnosis and provides symptomatic relief
1. Obtain oral consent from patient.
2. Clean area over the lump with an alcohol swab.
3. Immobilize the lump between the index and middle fingers of your nondominant hand.
4. Use a 23-gauge 1-in disposable needle with a semiopaque needle hub attached to a 3-mL or 5-mL syringe.
5. Introduce a small amount of air into the syringe barrel to break the seal.
6. Hold the syringe with your dominant hand, as you would a pen, and insert the needle into the centre of the lump (A).
7. Use the fingers of your nondominant hand to stabilize the distal aspect of the syringe while walking the fingers of your dominant hand up the syringe to pull back on the plunger to aspirate (B).

**Figure 2:** Aspirating a breast lump. Reprinted, with permission, from *Can Fam Physician* 1999;45:1928.
Cyst Aspiration (cont’d)

Adequate/reassuring if:

1. Cyst fully collapses (no residual mass)
2. Fluid is not brown/red (cloudy ok)
3. Does not re-accumulate (i.e. frequent f/u)

• If all are true, no need to send fluid.
• F/u in 1-3 months to ensure no reaccumulation or residual mass
• If no fluid or if bloody ➔ further workup
Fine Needle Aspiration: QUIZ

• FNAB should be done by an experienced cytopathologist or breast surgeon? ....TRUE OR FALSE?

• A diagnosis of FATTY TISSUE on FNA means what?

• When should you FOLLOW-UP a woman with a palpable mass and negative FNA and mammogram?
Fine Needle Aspiration Biopsy

- **Primary Use:** Diagnosis of solid masses
- Least invasive biopsy method
- Sensitivity is operator dependent:
  - For experienced personnel, 92-98%
  - For untrained personnel, 75% Average (as low as 65%).
- Experienced cytopathologist necessary to interpret
- Cannot diagnose DCIS, atypical hyperplasia or infiltrating carcinoma
- A non-diagnostic result in the setting of a discrete mass requires further work-up (possible sampling error)
YES, I DID HAVE MY MAMMOGRAM TODAY... WHY DO YOU ASK?
Palpable mass:
Diagnostic Mammography

- Cannot accurately differentiate benign from malignant masses or cystic from solid
- Poor sensitivity in young women due to density
- 15-20% of mammos are normal in women with palpable mass
- **Primary Use**: Screen opposite breast (in women >40 yo) and identify other non-palpable suspicious areas
- **Secondary use**: Further classification of the palpable mass

**EVEN IF THE MAMMO IS NORMAL, FURTHER WORK-UP IS REQUIRED**
Breast Cyst

Can’t distinguish cyst from solid on mammogram

Cyst is anechoic on ultrasound
Breast Density
Small Cancer

Spiculated mass
**Core Needle Biopsy**

- **Primary Use**: Diagnosis of solid masses, f/u of non-diagnostic FNAB
- Unlike FNAB, it can distinguish DCIS from invasive disease and because it is a tissue specimen, interpretation is easier
- Few direct comparisons to FNAB for palpable lesions: Studies mixed for sensitivity-some showing FNA better and some with CNB better. Similar specificity.
Core Needle Biopsy (cont’d)

- Like FNAB, requires training to prevent false negatives due to sampling error
- Used instead of FNAB by consultant preference or where cytopathology service not skilled in interpretation
- Also preferred for evaluation of non-palpable lesions
Great hike: Waipio Valley
Question 1

A 42 year old woman with no family or personal history of breast cancer has found a breast lump. She doesn’t know how long it has been there. It is not painful.

On exam, it is a discrete mass, about 2 cm, relatively smooth, mobile and non-tender. She has no axillary lymphadenopathy.

What is your next step?
So, what is the best first step?

- **First step = determine if cystic or solid.**
- How depends on your institution (availability and expertise of various services) and whether patient is symptomatic
- **FNAB:** Therapeutic, diagnostic and cost-efficient
- **U/S:** Similar in cost to FNAB, but FNAB more cost effective b/c 80% of masses are NOT cystic on U/S and will require FNAB to further evaluate
- **If FNAB not available:** U/S first will eliminate need for core biopsy in 20% that do have cysts
So, what is the best first step?

- **Office aspiration:** Reasonable 1st step esp if symptomatic. If not cystic, will require biopsy.
- **Mammography:** not best 1st step b/c can’t reliably distinguish benign from malignant or cystic from solid (but is usually part of a complete evaluation).
- **F/U 1-2 mos:** Could be ok in young woman (<40) who will reliably follow-up. Discuss options, get agreement, document well. If mass persists, go to U/S or FNA.
Triple test

- Improved accuracy by combining:
  1. FNAB or core biopsy
  2. Mammography (or ultrasound)
  3. Physical exam

- When all 3 results concordant, 99% accuracy
- However, PE adds little b/c not specific. Its role is simply to document dominant palpable mass
- If any one is suspicious, core or excisional biopsy
Accuracy of triple test

Mass “benign “on Palpation
Step 2: for a cystic mass…

- If symptomatic, aspirate
- If diagnosed by ultrasound and no aspiration is done, f/u 1 year.
- If aspirated and fluid is not bloody, f/u 1-3 months to ensure no residual mass or re-accumulation
- For any patient >40, also get mammo for screening (>50 recommend, >40 shared decision)
Step 2: for a solid mass

**Biopsy** (FNA or core needle biopsy)

PLUS

**Mammogram** (to further characterize mass and to screen rest of breasts)

- If both are negative, f/u 3-6 months
- If either is equivocal or results are not concordant, refer to breast surgeon for further evaluation
Ultrasound F/u instead of biopsy for solid mass?

- 2 small retrospective cohort studies—largest n=312 with palpable mass & U/S= “probably benign”
- Mostly young women so low pretest probability of cancer (avg age 34yo)
- Strict criteria for calling lesion “probably benign”
- 2 of 312 were cancer. NPV=0.6%.
- Conclude ok to not biopsy and follow with q 6mo u/s for 2 yrs (sim to f/u of birads 3 mammo)
- Caution: retrospective

Park, Acta Radiologica, 2008
How are we doing?

• In a study of women with a palpable mass and negative mammogram, only 57% received any subsequent evaluation.
  - Latinas, obese and uninsured less likely to have any subsequent evaluation

• A recent study of delay in diagnosis found the most common reason was inappropriate reassurance of women with a lump and normal mammogram
Summary: Palpable Breast Mass

- Choice of work-up often depends on availability and expertise of FNA, U/S and core needle biopsy
- None of these tests is 100% accurate, maintain a high index of suspicion
- Triple test is gold standard. If any of the 3 tests is discordant ➔ continue work-up
- Frequent f/u even for masses thought to be benign to detect false negatives
Evaluation of Abnormal Mammography Results and Palpable Breast Abnormalities

Karla Kerlikowske, MD; Rebecca Smith-Bindman, MD; Britt-Marie Ljung, MD; and Deborah Grady, MD, MPH

Background: Because approximately 1 in 10 women with a breast lump or abnormal mammography result will have breast cancer, a series of decisions must be taken by a primary care practitioner to exclude or establish a diagnosis of breast cancer among these women.

Purpose: To determine the most accurate and least invasive means to evaluate an abnormal mammography result and a palpable breast abnormality.

Data Source: MEDLINE search (January 1966 to March 2003) for articles and reviews describing the accuracy of clinical examination, biopsy procedures, and radiographic examination for patients with abnormal mammography results or palpable breast abnormalities.

Study Selection: The authors reviewed abstracts and selected articles that provided relevant primary data. Studies were included if 1) mammography, fine-needle aspiration biopsy, or core-needle biopsy was performed before a definitive diagnosis was obtained; 2) the study sample included 100 or more women; and 3) breast cancer status was determined from histopathology review of excisional biopsy specimens, from linkage with a state cancer registry or the Surveillance, Epidemiology, and End Results program, or from clinical follow-up of 95% or more of the study sample.

Data Extraction: One Investigator abstracted results. Methods were evaluated for major potential biases, but methodologic scoring was not performed.

Data Synthesis: Likelihood ratios for first screening mammography were 0.1 for the Breast Imaging Reporting and Data System (BI-RADS) assessment category “negative or benign finding,” 1.2 for “probably benign finding,” 7 for “need additional imaging evaluation,” 125 for “suspicious abnormality,” and 2200 for “highly suggestive of malignancy.” For fine-needle aspiration biopsy of a palpable lump performed by formally trained physicians, the likelihood ratio was infinity for an assessment of “malignant,” 2.6 for “atypical/suspicious,” and 0.02 for “benign.” When diagnostic mammography was used to evaluate a palpable lump or nonpalpable breast abnormality, the positive likelihood ratios were 5.6 and 9.4, and the negative likelihood ratios were 0.15 and 0.19, respectively.

Conclusions: Women whose screening mammography results are interpreted as “suspicious abnormality” or “highly suggestive of malignancy” have a high risk for breast cancer and should undergo core-needle biopsy or needle localization with surgical biopsy. Women whose screening mammography results are interpreted as “need additional imaging evaluation” have a moderate risk for breast cancer and should undergo diagnostic mammography or ultrasonography to decide whether a nonpalpable breast lesion should be biopsied. Women whose screening mammography results are interpreted as “probably benign finding” have a low risk for breast cancer and can undergo follow-up mammography in 6 months. Either fine-needle aspiration biopsy or ultrasonography is recommended as the first diagnostic test of a palpable breast abnormality to distinguish simple cysts from solid masses. Fine-needle aspiration biopsy also allows characterization of a solid mass. Diagnostic mammography does not help determine whether a palpable breast mass should be biopsied and should not affect the decision to perform a biopsy.


For author affiliations, see end of text.
Dominant Breast Mass

U/S or Aspirate*

Simple cyst

If aspirate and no residual lump, fluid not bloody then do CBE 4-6 wks. If u/s, no further w/u.

Solid or complex cyst
Do FNA or core bx

Benign

Positive Mammo
More imaging, core or excision bx

Negative Mammo
CBE 3-6 mos

Cancer

Atypical, suspicious

Core or excisional biopsy

Benign

Non-diagnostic

Repeat FNA, core or excisional biopsy

Cancer

Treat

Atypical, suspicious

Core or excisional biopsy

Benign

Non-diagnostic

Repeat FNA, core or excisional biopsy

* Aspirate=office aspiration or FNAB

Adapted from Kerlikowske, Ann Int Med, 2003
Q1b: Palpable mass in 42 yo

A mammography was chosen and is negative.

Next step (pick one)?

A. Re-examine in 1-2 months

B. F/u 1 year for annual exam

C. Ultrasound

D. Office aspiration

E. FNA

F. Core biopsy

Mammo cannot distinguish cyst from solid and is negative in 15% with palpable mass so need to proceed with work-up from Step 1 ie cyst vs solid
Q1c: Palpable mass in 42 yo

An ultrasound was chosen as the first step. It shows a cystic mass. Next step?

A. Re-examine in 1-2 months
B. F/u 1 year for annual exam
C. Office aspiration
D. FNA
E. Core biopsy

Simple cysts are benign and no further work-up is required. If the cyst is symptomatic, may aspirate in office.
Great Road Trip: Akaka Falls

On the way to Hilo. Incredibly lush. Quintessential Hawaii
Work-up of non-palpable lesions

**Table 1. American College of Radiology Breast Imaging Reporting and Data System**

<table>
<thead>
<tr>
<th>BI-RADS Assessment</th>
<th>Assessment</th>
<th>Definition</th>
<th>Examples of Type of Findings or Lesions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Negative</td>
<td>Breasts appear normal</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Benign finding</td>
<td>A negative mammogram, but the interpreter wishes to describe a finding</td>
<td>Calcified fibroadenoma, secretory calcifications, fat-containing lesion (such as an oil cyst) or intramammary lymph node</td>
</tr>
<tr>
<td>3</td>
<td>Probably benign finding</td>
<td>A mammogram with a lesion with a high probability of being benign</td>
<td>A discrete, extremely well-defined round mass</td>
</tr>
<tr>
<td>0</td>
<td>Need additional imaging evaluation</td>
<td>A mammogram with a lesion for which additional imaging evaluation is needed; used almost always in a screening situation</td>
<td>Indeterminate calcification, mass, or breast density</td>
</tr>
<tr>
<td>4</td>
<td>Suspicious abnormality</td>
<td>A mammogram with a lesion for which the radiologist has sufficient concern to recommend a biopsy</td>
<td>Punctate, linear, or amorphous calcifications; ill-defined mass; asymmetric breast density</td>
</tr>
<tr>
<td>5</td>
<td>Highly suggestive of malignancy</td>
<td>A mammogram with a lesion that has a high probability of being cancer</td>
<td>Spiculated mass, malignant-appearing microcalcifications</td>
</tr>
</tbody>
</table>

* BI-RADS = Breast Imaging Reporting and Data System.
Pre/Post Test Probability of cancer based on mammo results and age

**Table 4. Risk for Breast Cancer Based on Age and Mammographic Interpretation***

<table>
<thead>
<tr>
<th>Age and Type of Screening Examination</th>
<th>Risk for Breast Cancer before Mammography†</th>
<th>Risk for Breast Cancer Based on Age and Mammographic Interpretation (BI-RADS Assessment)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Risk for Breast Cancer before Mammography†</td>
<td>Probably Benign Finding (3)</td>
</tr>
<tr>
<td>40–49 y</td>
<td></td>
<td>0.004</td>
</tr>
<tr>
<td>First screening</td>
<td>0.003</td>
<td>0.0046</td>
</tr>
<tr>
<td>Subsequent screening</td>
<td>0.0015</td>
<td>0.0046</td>
</tr>
<tr>
<td>50–59 y</td>
<td></td>
<td>0.007</td>
</tr>
<tr>
<td>First screening</td>
<td>0.006</td>
<td>0.009</td>
</tr>
<tr>
<td>Subsequent screening</td>
<td>0.0028</td>
<td>0.009</td>
</tr>
<tr>
<td>60–69 y</td>
<td></td>
<td>0.016</td>
</tr>
<tr>
<td>First screening</td>
<td>0.013</td>
<td>0.016</td>
</tr>
<tr>
<td>Subsequent screening</td>
<td>0.0037</td>
<td>0.011</td>
</tr>
<tr>
<td>≥70 y</td>
<td></td>
<td>0.017</td>
</tr>
<tr>
<td>First screening</td>
<td>0.014</td>
<td>0.017</td>
</tr>
<tr>
<td>Subsequent screening</td>
<td>0.0037</td>
<td>0.001</td>
</tr>
</tbody>
</table>

* BI-RADS = Breast Imaging Reporting and Data System.
† Based on the prevalence of breast cancer per 1000 first screening examinations for first screening (6); on Surveillance, Epidemiology, and End Results cancer statistics for incidence of invasive breast cancer for subsequent screenings (45); and on estimated likelihood ratios. Adapted with permission from Kerlikowske et al. (14). (JAMA. 1996; 276(1):42. Copyrighted 1996, American Medical Association).

Kerlikowske, Annals Int Med, 2003
Follow-up of abnormal screening mammogram

Abnormal screening mammography result (BI-RADS assessment)

- Probably benign finding (BI-RADS assessment: 3)
  - Diagnostic view of breast with suspicious lesion in 6 mo

- Need additional imaging (BI-RADS assessment: 0)
  - Spot compression and magnification views or ultrasonography as soon as possible

- Suspicious abnormality (BI-RADS assessment: 4)
  - Core-needle biopsy or needle localization biopsy as soon as possible

- Highly suggestive of malignancy (BI-RADS assessment: 5)

If normal, repeat screen 6 mos then q 1-2 yrs

Consider breast exam to see if lesion is palpable & biopsyable

Breast Pain

- 2/3 - 3/4 report it
- > 1/2 of breast visits
- **Etiology unknown:** not associated with prolactin, estrogen or progesterone levels
- 2 types: cyclic & non-cyclic
- Both types chronic, relapsing especially if severe or early onset
- Severe breast pain interferes with sex (46%), activity (36%), social (13%), work (6%)
Mastalgia: Treatment

- Work-up: risk factor evaluation, exam, mammo if >40 years
- Determine effect on QOL
- 60-80% resolve spontaneously.
- Reassurance often sufficient
Mastalgia: Treatment

**Proven in RCT’s:**
- NSAID’s (topical and oral)
- Evening Primrose Oil
- Iodine
- Vitex agnus castus extract-containing solution (VACS)
- Gestrinone (N/A in US)
- Progesterone vaginal cream
- Bromocryptine
- Danazol
- Tamoxifen

**No benefit** (per RCT’s, though many are small and likely underpowered)
- Caffeine restriction
- Vitamin E
- Vitamin B6
- Diuretics
- Provera
- Soya protein
- Isoflavones

**Possibly effective, 1000 mg bid-tid for 2-3 months**
- Topical diclofenac very effective

**Most effective but poorly tolerated**
- Diclofenac (topical and oral)

**Other:** Supportive, well fitting bra, bra at night, trigger point injections for localized pain, OCP’s—help some, make worse in others. If on OCP, try lower dose of Estradiol
Topical NSAID for mastalgia

Diclofenac topical (Voltaren) q 8hr vs placebo cream. Randomized, double-blinded

Very large decrease in pain score

Table 2. Average Change in Pain Scores Between and Within Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>No.</th>
<th>Before treatment</th>
<th>After 6 mo treatment</th>
<th>p Value*</th>
<th>Change in pain score</th>
<th>p+ Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyclic mastalgia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment (Ia)</td>
<td>30</td>
<td>7.13 (1.38)</td>
<td>1.26 (1.25)</td>
<td>0.0001</td>
<td>5.87 (1.22)</td>
<td>0.0001</td>
</tr>
<tr>
<td>Placebo (Ib)</td>
<td>30</td>
<td>7.23 (1.50)</td>
<td>5.93 (1.20)</td>
<td>0.0001</td>
<td>1.30 (1.34)</td>
<td></td>
</tr>
<tr>
<td>Noncyclic mastalgia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment (IIa)</td>
<td>24</td>
<td>7.16 (1.09)</td>
<td>0.83 (0.91)</td>
<td>0.0001</td>
<td>6.33 (1.34)</td>
<td>0.0001</td>
</tr>
<tr>
<td>Placebo (IIb)</td>
<td>24</td>
<td>7.37 (1.05)</td>
<td>6.25 (1.07)</td>
<td>0.0001</td>
<td>1.12 (1.11)</td>
<td></td>
</tr>
</tbody>
</table>

Data presented as mean values (standard deviation).
*Changes within groups (before versus 6 months after).
†Changes in pain within groups, Ia versus Ib and IIa versus IIb, respectively; Ia versus IIa, p = 0.53; Ib versus IIb, p = 0.96, respectively.

Colac, Journal of the American College of Surgeons, April 2003
Mastalgia: Prescribing Guide

Proven in RCT’s:

- **NSAID’s** (topical diclofenac q 8hr very effective in 3 RCTs; oral NSAIDs—moderately effective in some but not all RCTS)

- **Evening Primrose Oil**: 1000mg tid for at least 1 mo trial, >$2/day, mild nausea. Recent meta-analysis showed no benefit

- **Bromocriptine**: increase dose gradually to decrease side effects (nausea, dizziness, orthostatic hypotension, headache). 1.25 mg qhs, increase by 1.25 mg every week until 5 mg/day.

- **Danazol**: best of the endocrine agents but virulizing side effects make it less desirable, teratogenic, expensive. Start at 200mg qd. Taper down as tolerated to 100mg every other day or qd during luteal phase.
Mastalgia: Prescribing Guide

Proven in RCT’s (continued):

- **Tamoxifen**: 10 mg qd, hot flashes, expensive
- **Torimefin**: 30 mg qd, vag d/c, irreg menses
- **GnRH agonists**: very expensive, menopausal side effects, can only use for 6 months due to bone loss.
- **Local Injections**: trigger point injection of 1% lidocaine (1cc) and methyl prednisone (40mg). Half require second injection in 2-3 months.
Nipple Discharge

- Usually benign or malignant? **benign**
- Most common cause of unilateral discharge? **intraductal papilloma**
- Other causes: duct ectasia, nipple eczema, Paget disease
- If associated with mass, more likely to be **cancer** (but cancer rarely presents with nipple d/c)
Nipple Discharge

**Physiologic:**
- Due to galactorrhea (ie increased prolactin) or nipple stimulation
- With compression
- Multiple ducts
- Clear, yellow, white
- No mass

**Pathologic:**
- Papilloma, cancer
- Spontaneous
- Single duct
- Bloody
- Mass present
Nipple Discharge: Diagnosis

Physiologic:
- History: running, breast stimulation
- Prolactin, TSH
- Meds: Psychotropics

Pathologic (Spont, unilat):
- Isolate involved duct
- Hemoccult to confirm blood, cytology not useful
- Mammography with retro-alveolar views
- Galactography controversial
- Surgery referral
Welcome to Monstera

A hip, casual, moderately priced restaurant providing great food, service, ambiance and value.

We are more than a typical sushi restaurant. We have added menu items of Noodle Houses and Izakayas (Japanese Pubs of Japan) to offer you a selection of dishes never seen before on the Big Island.

Open Daily

Dinner 5:30 pm - 10:00 pm

At the Shops at Muana Lani (1 resort down the road). Sit at sushi bar if you can.
Mastitis

- 2 types: lactating vs non-lactating
- Primary vs secondary (cellulitis, folliculitis, hyradinitis, sebaceous cyst)

Cellulitis
Lactational Mastitis

- Suspect in any breast-feeding woman with a fever and malaise
- Often wedge shaped redness over involved duct
- Staph, Strept—(community acquired MRSA becoming more common so do culture of milk)
Non-Lactational Mastitis

• Difficult to treat
• Often chronic, recurrent
• Peri-areolar: young (avg 32), 90% are smokers, central pain, nipple retraction and discharge, often assoc with abscess
• Peripheral: elderly, usually associated with underlying disease (diabetes) or trauma
• Gram negatives, staph, strept, anaerobes
Mastitis Treatment

**Lactational**
- Increase feeding, warm compresses
- Keflex, Dicloxicillin
- IV if not better quickly
- Septra or Clinda for community acquired MRSA

**Non-Lactational**
- Include anaerobic coverage
- Clindamycin or Flagyl + Ancef or Nafcillin

**Biopsy if recurrent or doesn’t resolve**
Cancer can mimic mastitis

Inflammatory Cancer
Breast Abscess

- Suspect if “lump” on exam or if mastitis not responding to abx
- Ultrasound to confirm
- Get culture
- Aspiration now preferred over I&D
- Sometimes need repeated aspirations
- I&D often assoc with poor cosmetic result or fistula
The End.... Questions