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Academy of Breastfeeding Medicine Clinical Protocol #36: The Mastitis Spectrum, Revised 2022

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Abstract

A central goal of the Academy of Breastfeeding Medicine is the development of clinical protocols for managing common medical problems that may impact breastfeeding success. These protocols serve only as guidelines for the care of breastfeeding mothers and infants and do not delineate an exclusive course of treatment or serve as standards of medical care. Variations in treatment may be appropriate according to the needs of an individual patient. The Academy of Breastfeeding Medicine recognizes that not all lactating individuals identify as women. Using gender-inclusive language, however, is not possible in all languages and all countries and for all readers. The position of the Academy of Breastfeeding Medicine (https://doi.org/10.1089/bfm.2021.29188.abm) is to interpret clinical protocols within the framework of inclusivity of all breastfeeding, chestfeeding, and human milk-feeding individuals.

Keywords: abscess, breastfeeding, dysbiosis, engorgement, galactocele, lactation, mastitis, phlegmon

Introduction

Mastitis is a common maternal complication of lactation and contributes to early cessation of breastfeeding.[1] In the past, mastitis has been regarded as a single pathological entity in the lactating breast.[2] However, scientific evidence now demonstrates that mastitis encompasses a *spectrum* of conditions resulting from ductal inflammation and stromal edema (Fig. 1). If ductal narrowing and alveolar congestion are worsened by overstimulation of milk production, then inflammatory mastitis can develop, and acute bacterial mastitis may follow (Fig. 2). This can progress to phlegmon or abscess, particularly in the setting of tissue trauma from aggressive breast massage. Galactoceles, which can result from unresolved hyperlactation, can become infected. Subacute mastitis occurs in the setting of chronic mammary dysbiosis, with bacterial biofilms narrowing ductal lumens.

The pathophysiology, diagnosis, and management of each condition in the mastitis spectrum (ductal narrowing, inflammatory mastitis, bacterial mastitis, phlegmon, abscess, galactocele, and subacute mastitis) will be discussed hereunder. Early postpartum engorgement, a distinct condition that can share some clinical features with mastitis spectrum disorders, will also be reviewed.

Note that this protocol now replaces ABM Protocols #4, Mastitis, and #20, Engorgement, which will both be retired. ABM Protocols #32 (Management of Hyperlactation)[3] and #35 (Supporting Breastfeeding During Maternal or Child Hospitalization)[4] may serve as useful adjuncts to this protocol.

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No Disclosures

For brevity and anatomic clarity, I will use the terms “breast” and “breastfeeding.” However, information presented applies equally to transgender men who chestfeed.


3 days and
the boob!

45 y.o…	C…	Bilat nipple scaly skin , has Hereditary TTR & Systemic Scleraderma(pt cx her appt on 11/15)
78 y.o…	B…	R breast ALH, referred by Dr.Soares
69 y.o…	B…	NEX DX Right breast ILC, HER2/Fish PEND, refreed by Dr.Soares, lives in SY
49 y.o…	O…	MOVED FROM 1/27 MITCHELL OUT! SPANISH SPEAKING!3 month FUV, breast cysts (US done in Nov 21)
70 y.o…	O…	6 month FUV (was due in Dec), mammo was in Dec LIVES IN SLO
59 y.o…	O…	New TEMPLATE!! Next to alst Chemo 1/18-2/8, Mammo & US @ SY cottage on 2/2
53 y.o…	O…	Kenalog injection Bilat, last injection was on 12/23/21, ok by Dr.MItchell on time frame for next injection confirmed on 1/31 w/KM
50 y.o…	C…	NEW TEMPLATE!! R breast cyst, Had cyst since 2020, has noticed gotten more sensitive since Mammo in Oct, thinks its changed in size, US ordered for 1/4/
29 y.o…	C…	Right breast Granulomatous mastitis, had bx done on 1/18, referred by JMG, CALL IF CANCELLATION!!
36 y.o…	L…	Husband Auth, Baby 1 month, very low milk supply, 1st baby, only pumps 45ml, had to start supplementing with formula
32 y.o…	O…	1 week FUV
33 y.o…	L…	NEW TEMPLATE!! Baby is 3 months, mom referred because she is having Post partum/OCD anxiety issues, also has some lactation and nutrition issues, refe
32 y.o…	O…	2 week FUV Med ck
55 y.o…	O…	needs more gauze and says
33 y.o…	T…	2 week FUV Ok Telemed
35 y.o…	O…	3 WEEK fuv, (PT CX HER A
33 y.o…	O…	need to drain abcess
37 y.o…	T…	Patient is Cardiologost in Pa

84 y.o…	C…	Left breast marjin reexcision
77 y.o…	B…	NEW TEMPLATE!! NEW CANCER DIAG, MRI on 1/25 SAnsum
66 y.o…	P…	7 day post op
49 y.o…	C…	Breats mass, Mammo @ [redacted]UGHTER, FROM VISALIA)
74 y.o…	O…	6 month FUV mammo @8:30 fROM vISALIA
24 y.o…	O…	1 week FUV
33 y.o…	O…	2 week FUV LACTATION
55 y.o…	O…	Ck open wound left axilla
33 y.o…	O…	1 week FUV
39 y.o…	O…	Milk supply is declining
34 y.o…	O…	1 week FUV
31 y.o…	O…	NEW TEMPLATE!! 3 week FUV LACTATION
32 y.o…	O…	NEW TEMPLATE!! 1 week FUV
78 y.o…	B…	NEW CX Diag. R breast IDC, HER 2 PEND. Bx was on 1/11
30 y.o…	L…	HUSBAND AUTH,BAby is 7 weeks, Heavy let down, having anxiety during pumping, doesnt know why, baby
69 y.o…	P…	10 day post op
72 y.o…	P…	10 day post op
45 y.o…	P…	LM to MOVE TO 12:4510 day post op
34 y.o…	T…	3 week FUV Med ck and also talk about getting ext for disabilty
37 y.o…	L…	EMERGENCY ADD ON!! referral from Sansum OB office, POSS MASTITIS

…nastitis every 2-3 weeks, pum

Overview

- Pathophysiology
  - Hyperlactation & Dysbiosis
  - Ductal narrowing
  - Inflammatory mastitis
  - Bacterial mastitis
  - Phlegmon
  - Abscess
  - Galactocele
- Recommendations

Mastitis: The PAST

- Patient told this:
  - Soak breast in Epsom salt
  - Pump
  - Apply castor oil wraps with heating pad on top
    - Patient said, “Our kitchen looked like a ‘Breaking Bad’ episode”
  - Massage
  - Pump
- Do “Breast Gymnastics”

Pt calling because she went to a clinic that offers lactation services and advised she may have mastitis
States she has Redness and flu like symptoms
Was advised she needs antibiotics

went to see the lactation consultants at the mothers circle and they said I most likely do have mastitis based on my symptoms. I didn't see it before but they found a bright red area on the left breast under the nipple that I could not see myself until they pointed it out. I'm going to pump and nurse a lot on that side tonight. But still having the aches and pains all over.

Ok, I'm sorry to hear that. I'll call in antibiotics for you,

and reports recognizing similar symptoms this afternoon with subsequent "milk blister" to "tip of nipple." PT reports attempts to "unclogg" the duct with massaging and continuing feeding. PT reports increased pain throughout the evening with no relief from tylenol.

Ineffective treatments: **Episome salts, hot compresses, OTC pain medication, hand expression and pumping**

Evolution of Practice

It’s a Lactolution!

Deepest Thank you and a Question

Hi Dr. Mitchell! I just finished scouring your website, listening to your talk for OWLA on the new mastitis protocol, and reading your clinical article on Nonpharmacologic Approaches to Engorgement and Breast Pain. I have to say, I cried with relief when I found your material. I was recently caught in the cross hairs of the changing mastitis protocol (I am 11 weeks postpartum) and was instructed for the first 6 weeks by my OB & midwives to heat my breast hotter to 'melt the cheeseballs' in my ducts that were apparently causing antibiotic resistant mastitis. They also had me heating, nursing, and then heating and pumping every 2-3 hours to keep the breast empty. It was utter HELL. I now know (and my intuition was right), that I didn't have any clogged ducts at all...I had severe engorgement and inflammation, and just lumpy, sore breasts! My breasts were red because of that, and I didn't need 3 rounds of antibiotics and to tell my body to make enough milk for twins. I'm appalled at the information I was given and I just wanted to say THANK YOU from the bottom of my heart for your efforts to right these wrongs with putting good information out there for postpartum mothers and lactating people.

Yes, yes, yes please do share. I will also add that it was recommended that, because I wasn't getting the tissue hot enough, that I use a crock pot of hot washclothes to heat the breast before pumping. It was scalding hot; I was essentially burning myself.

I remember leaning over my kitchen counters "to straighten out the ducts", scalding my breasts, at 3:00 in the morning (every 2-3 hours) and bawling my eyes out. It was not what I thought early motherhood would be like, and I went to some really dark places mentally.

Feel free to add that to my testimony.

If I help just one person with my experience it would be really therapeutic for me.

Thanks for the clarification on the massage - I still get engorged in the mornings when the baby sleeps longer stretches, so I've been doing some lymphatic drainage massage and then ice to relief some of the discomfort instead of pumping.

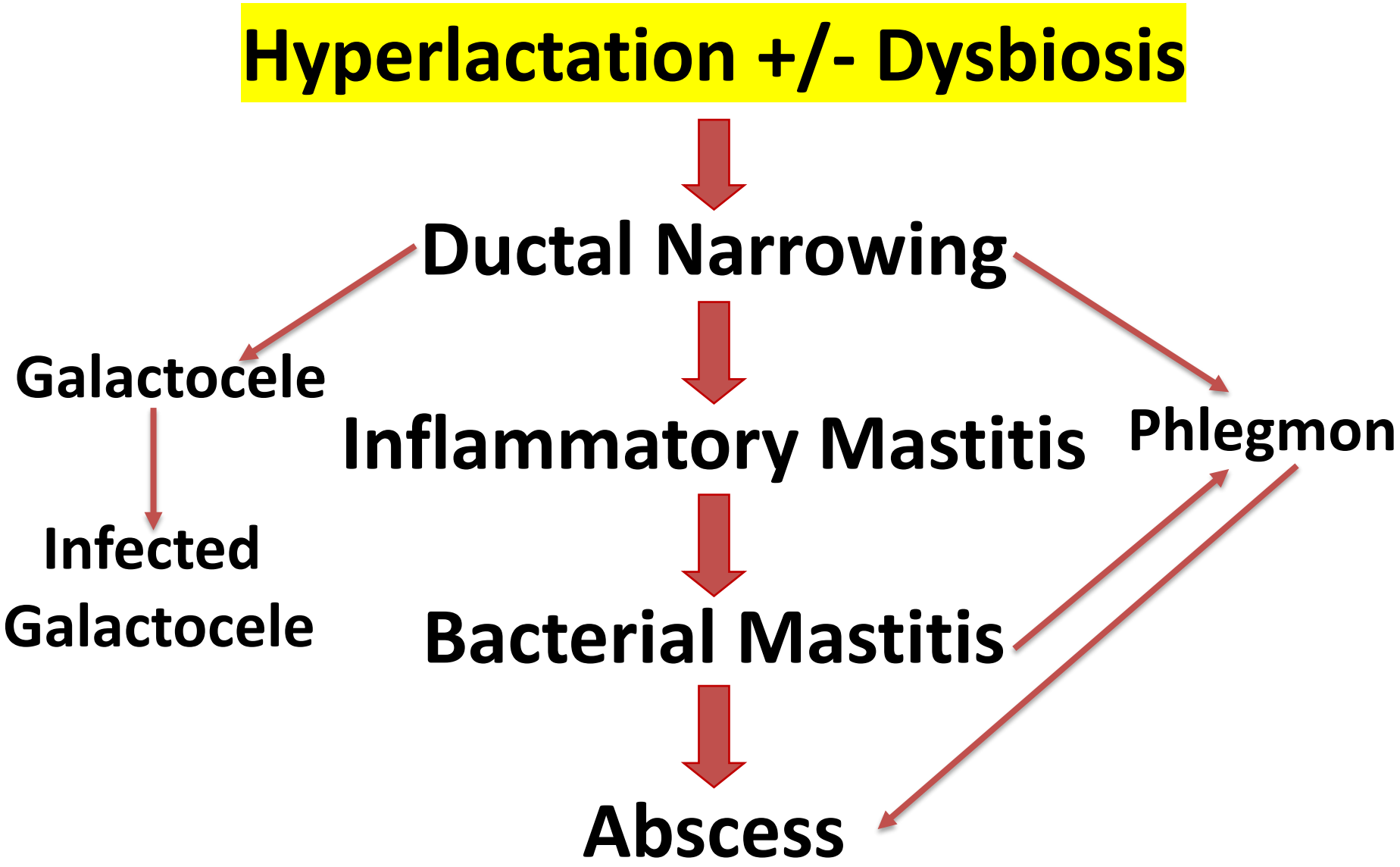
Because of these new recommendations I handled a clogged duct that I last week with confidence and kindness towards my breasts and it resolved quickly. Nursing, ice and ibuprofen makes so much more sense than the alternative.

I can't thank you enough!

Indigenous Wayuu Woman La Guajira, Colombia

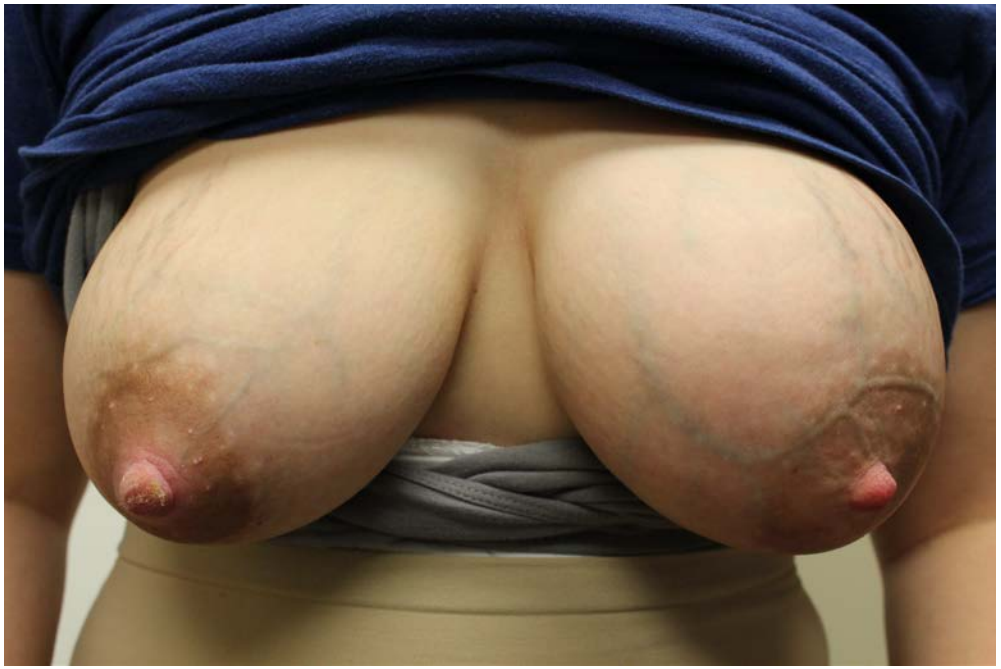
Why Didn't Our Previous Approaches Work?

- Misunderstanding of breast anatomy and physiology
- Repeated interventions (e.g. repeated antibiotics) without addressing root causes of problems
- Moved away from feeding physiologically as we used to do in traditional cultures

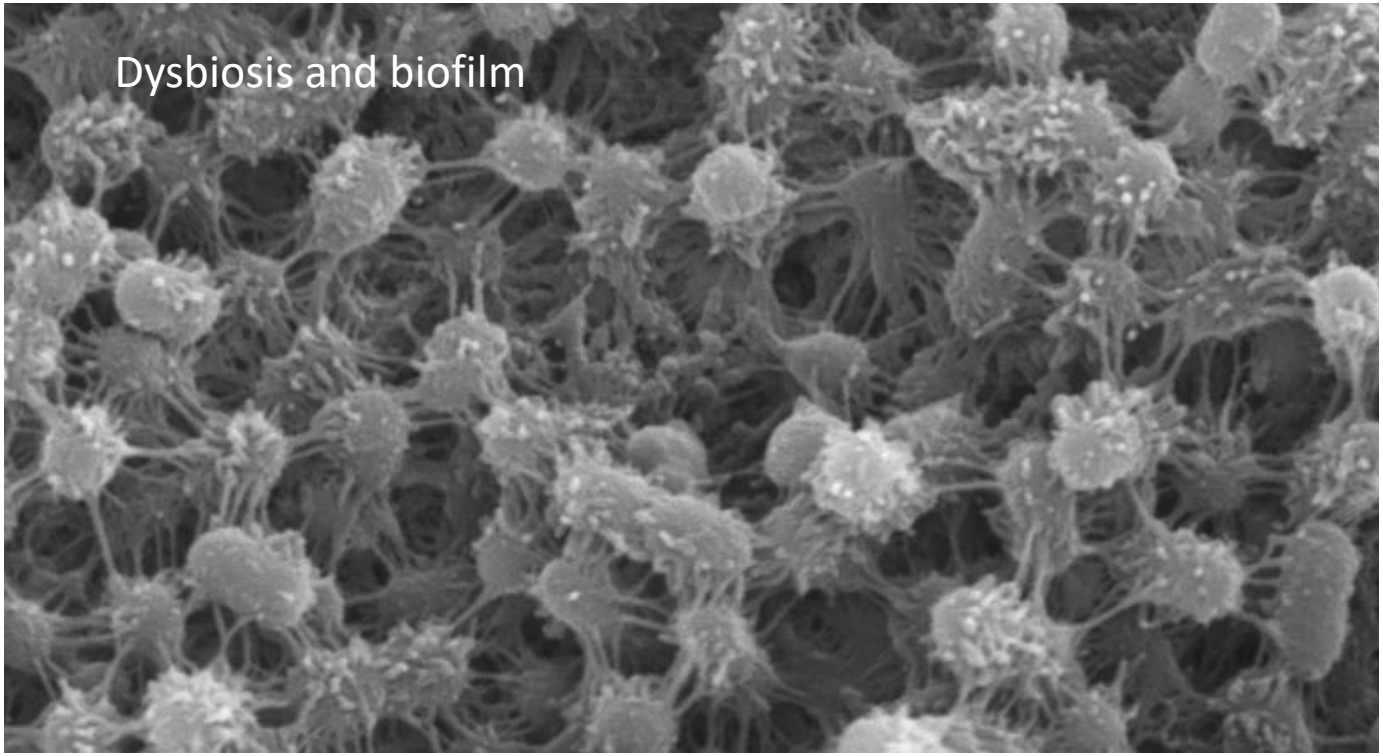

Hyperlactation +/- Dysbiosis
Ductal Narrowing
Galactocele
Infected Galactocele
Inflammatory Mastitis
Phlegmon
Bacterial Mastitis
Abscess

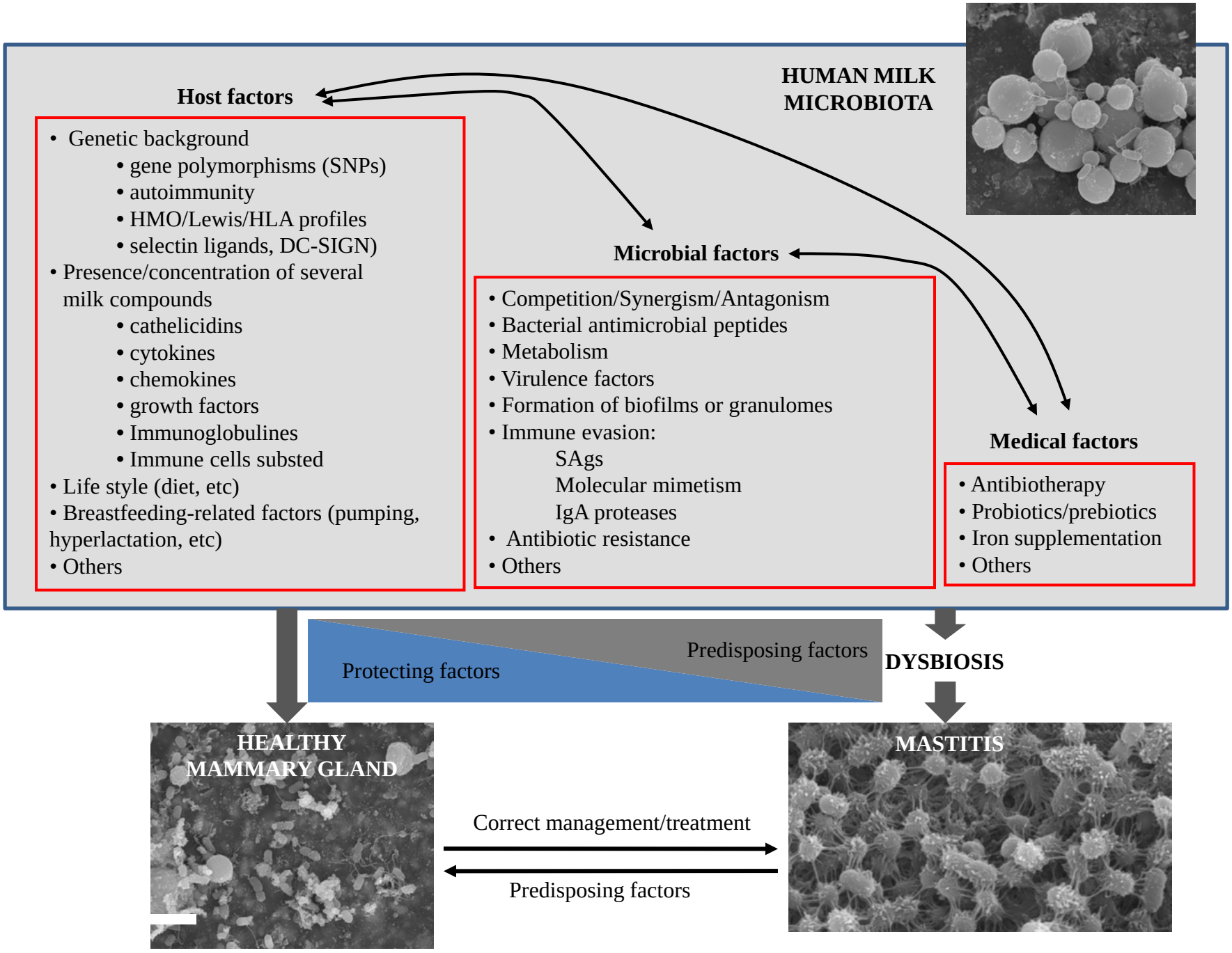
Hyperlactation or “Oversupply”

- No precise definition
- Production of milk in excess of what baby needs
  - 450-1200ml term infant
    - doesn’t change over time
- Can be localized issue to one breast or one ductal system/quadrant

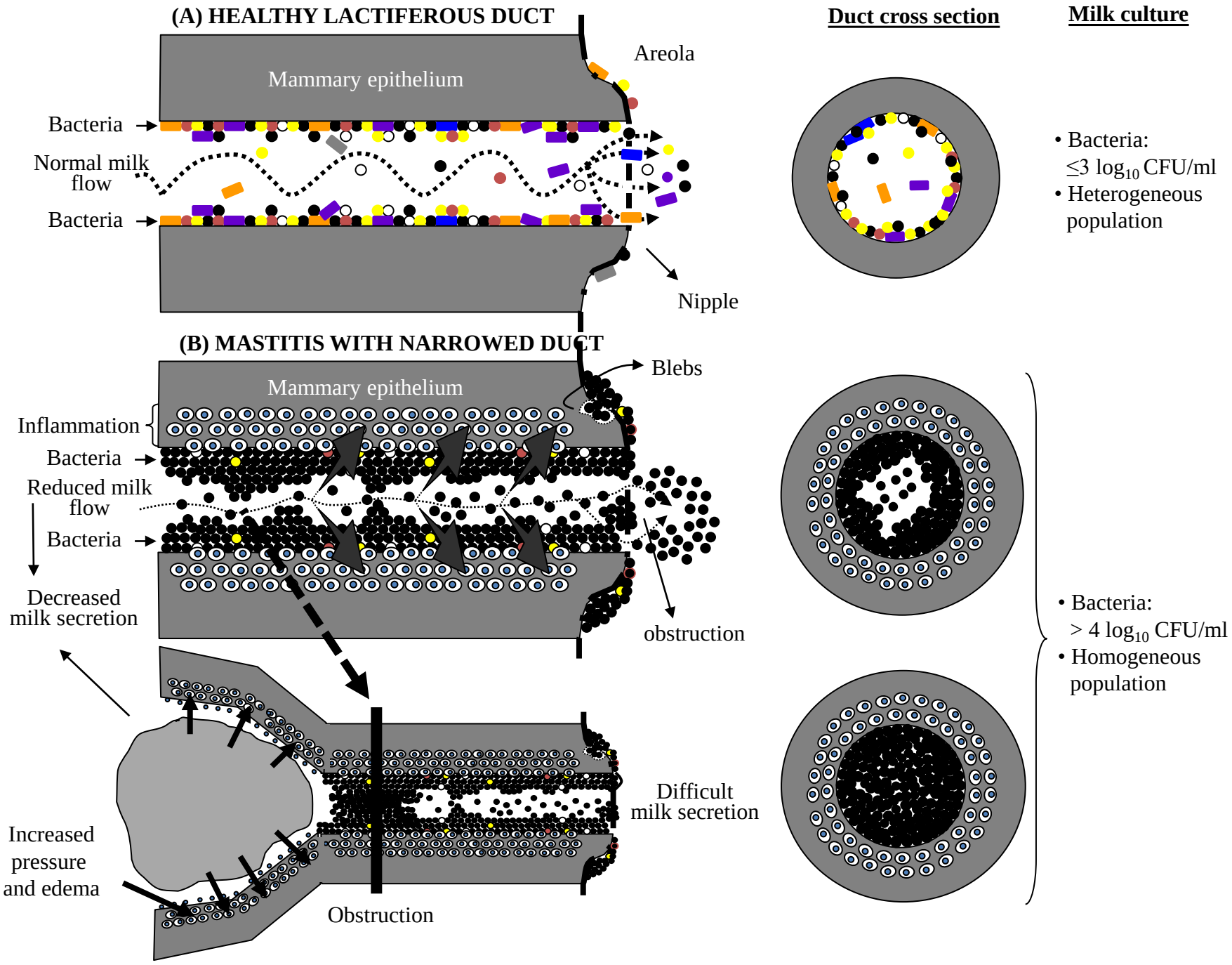


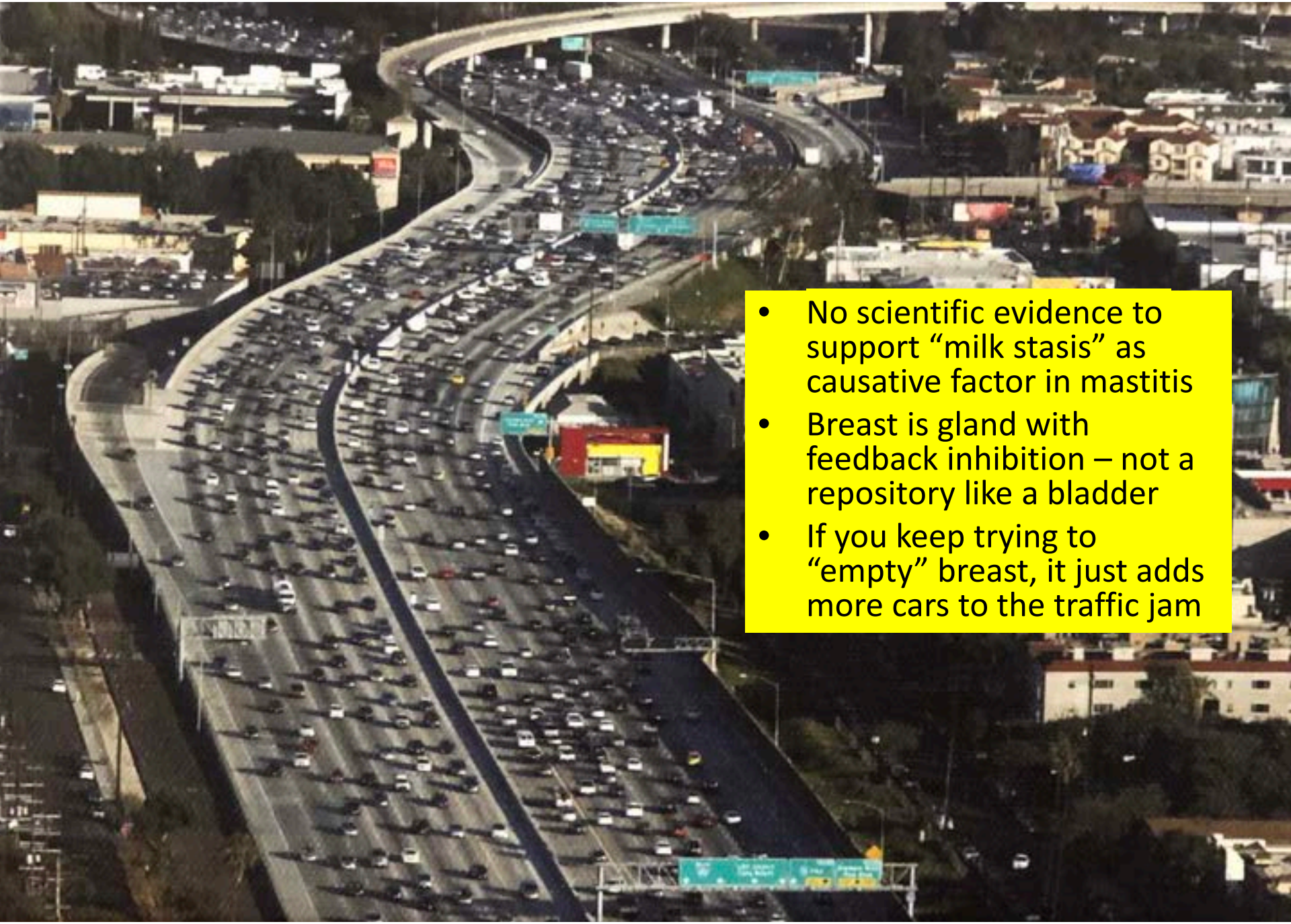
Dysbiosis: Imbalance of Flora





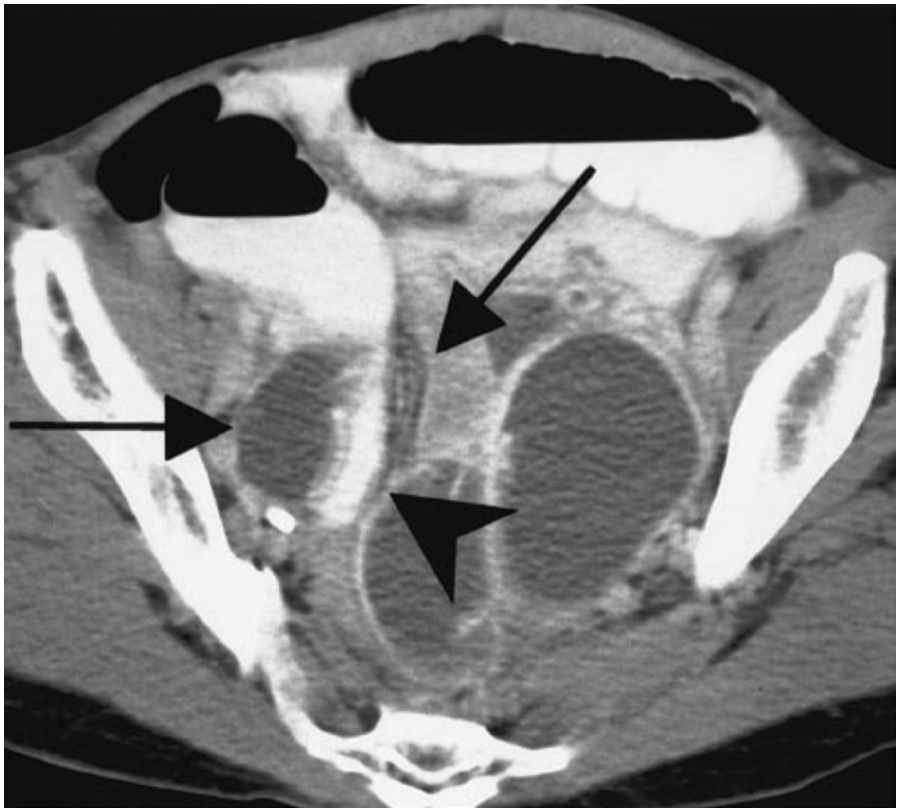
Factors that may play a role in the composition of the human milk microbiota and in protecting or predisposing to mastitis.

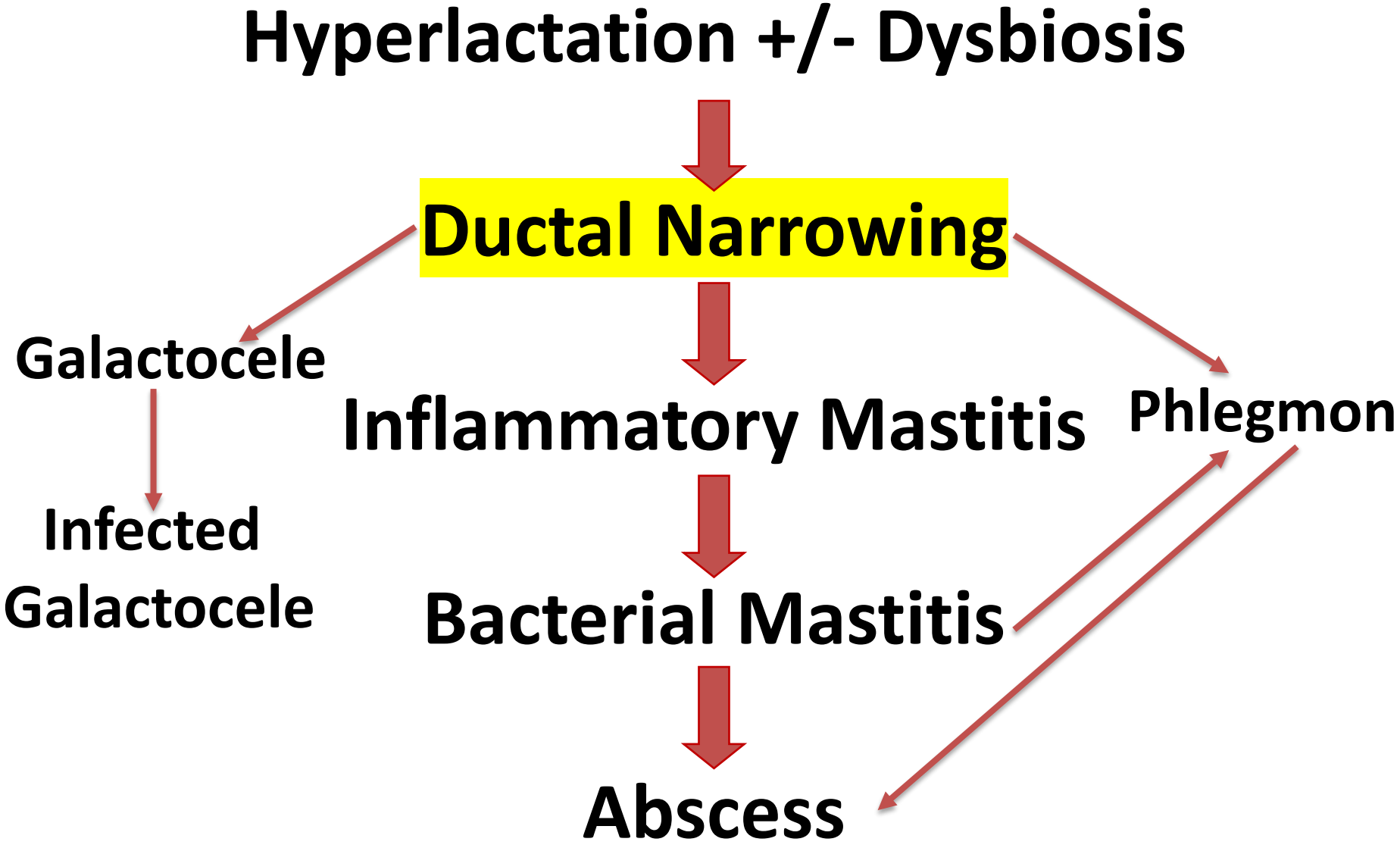

(A) HEALTHY LACTIFEROUS DUCT
Duct cross section
Milk culture
Areola
Mammary epithelium
Bacteria
Normal milk flow
Bacteria
Nipple
• Bacteria: ≤3 log10 CFU/ml
• Heterogeneous population
(B) MASTITIS WITH NARROWED DUCT
Blebs
Mammary epithelium
Inflammation
Bacteria
Reduced milk flow
Bacteria
Decreased milk secretion
obstruction
• Bacteria: > 4 log10 CFU/ml
• Homogeneous population
Difficult milk secretion
Increased pressure and edema
Obstruction


• No scientific evidence to support “milk stasis” as causative factor in mastitis
• Breast is gland with feedback inhibition – not a repository like a bladder
• If you keep trying to “empty” breast, it just adds more cars to the traffic jam

It’s like Feeding a Bowel Obstruction!

- Or an inflamed gallbladder
- Or feeding pancreatitis
- Or massaging a sprained ankle!
- LET THE EDEMA AND INFLAMMATION RESOLVE!




Hyperlactation +/- Dysbiosis
Ductal Narrowing
Galactocele
Infected Galactocele
Inflammatory Mastitis
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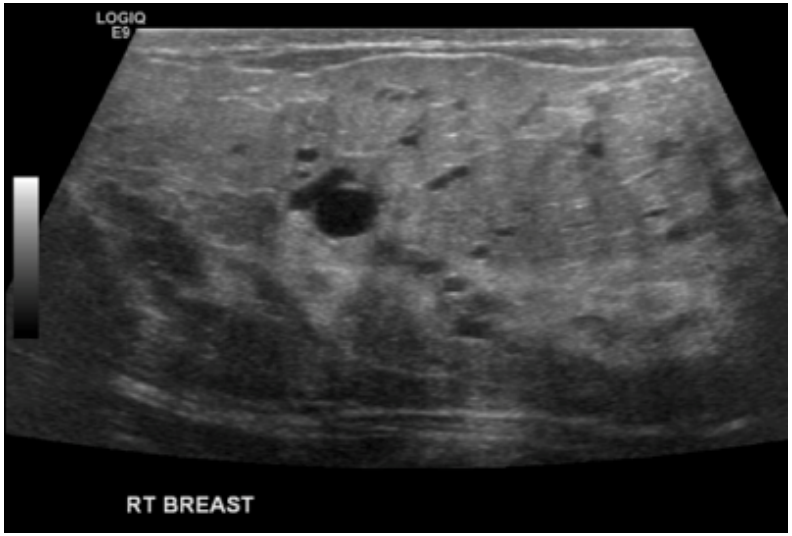
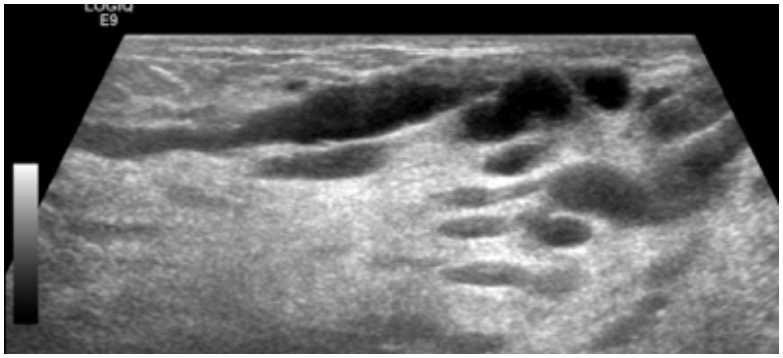
Bacterial Mastitis
Abscess

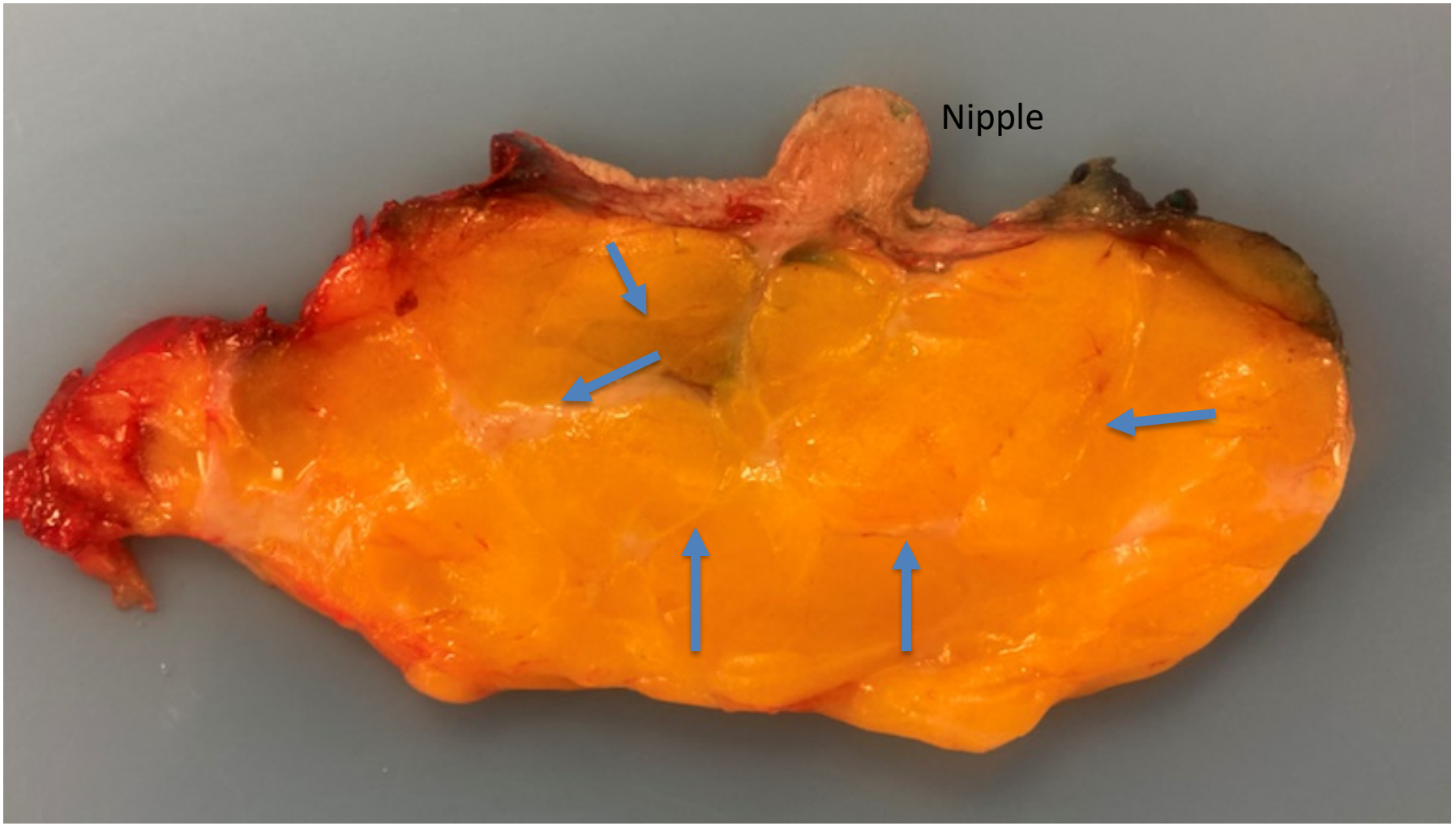
Ductal Narrowing ("Plugging")

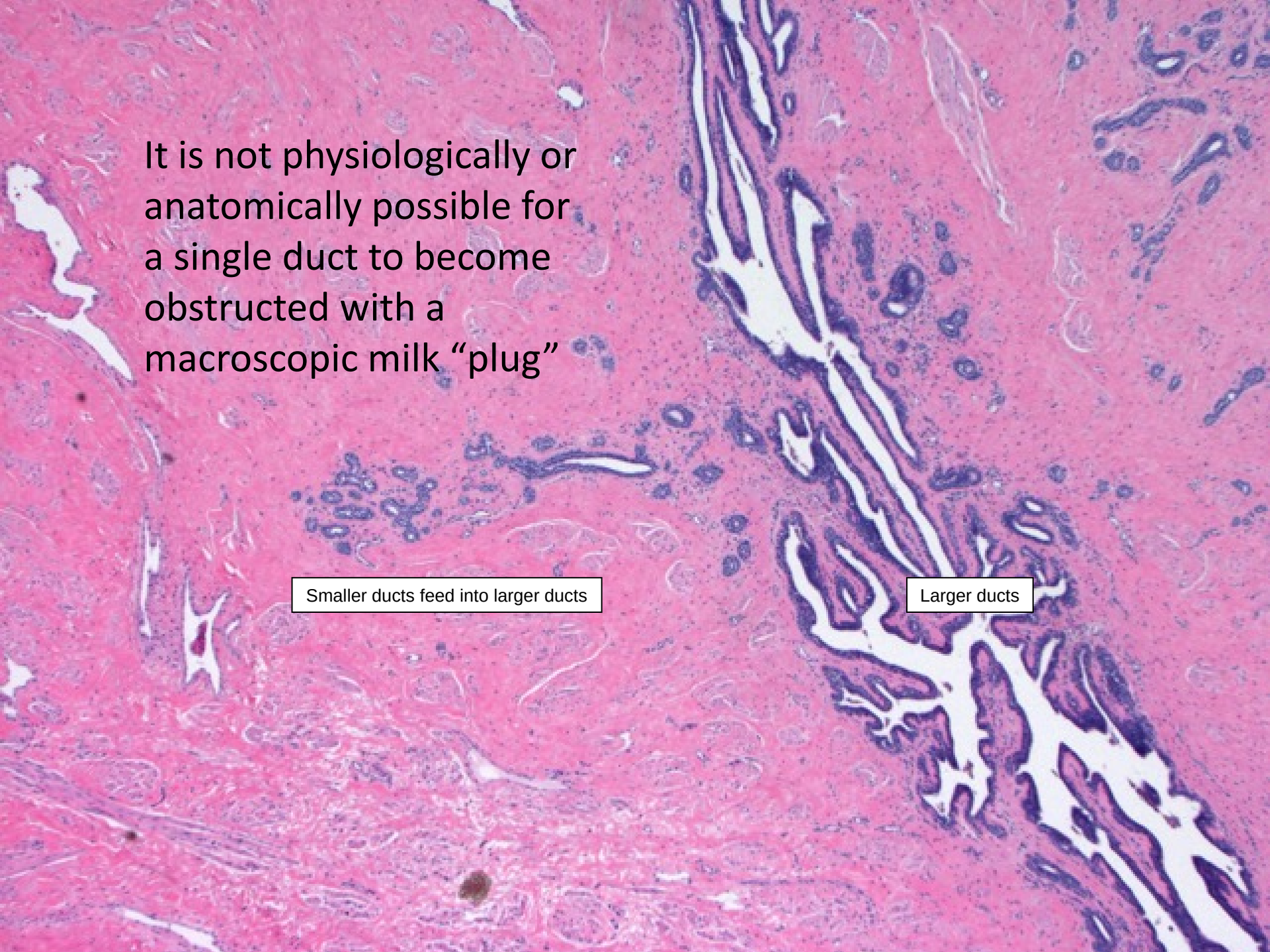
- Ductal inflammation and narrowing related to alveolar distension and/or mammary dysbiosis
- Symptoms
  - Tender, full area or "lump"
  - No redness, fever, or systemic signs
  - May notice relief after feeding or pumping because it's simply removing that milk
  - However, it perpetuates cycle as more cars just get on freeway



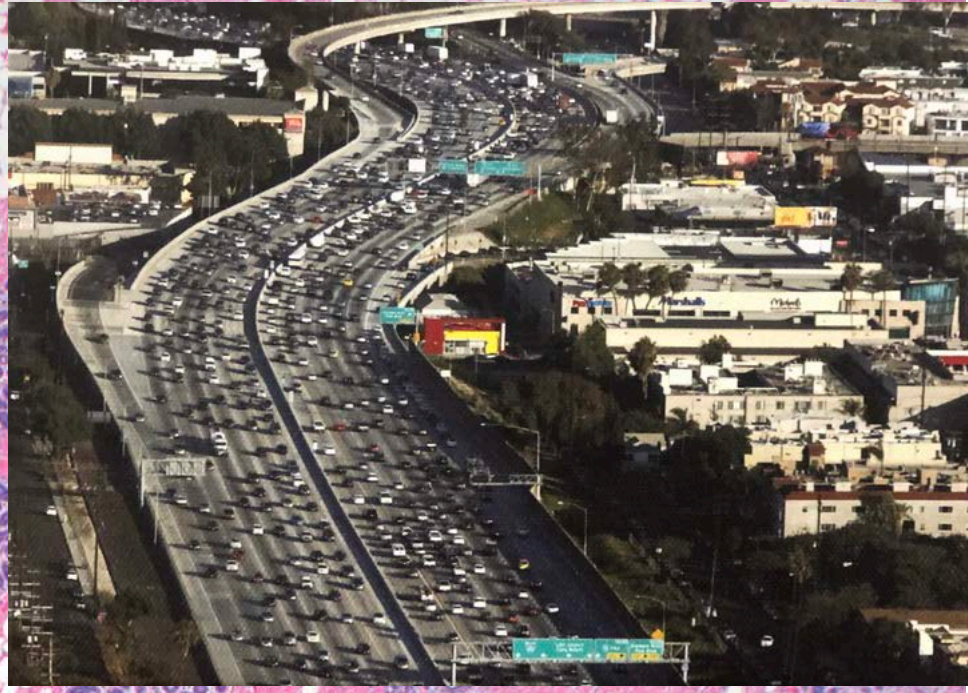


Innumerable, Interlacing Ducts




It is not physiologically or anatomically possible for a single duct to become obstructed with a macroscopic milk “plug”
Smaller ducts feed into larger ducts
Larger ducts

Pumping to prevent “milk stasis” increases distension of alveolar cells (more houses surrounding the freeway) and thereby narrows the freeway lanes (ducts), and adds more cars (milk) to the freeway, worsening the traffic jam (swelling and pain)



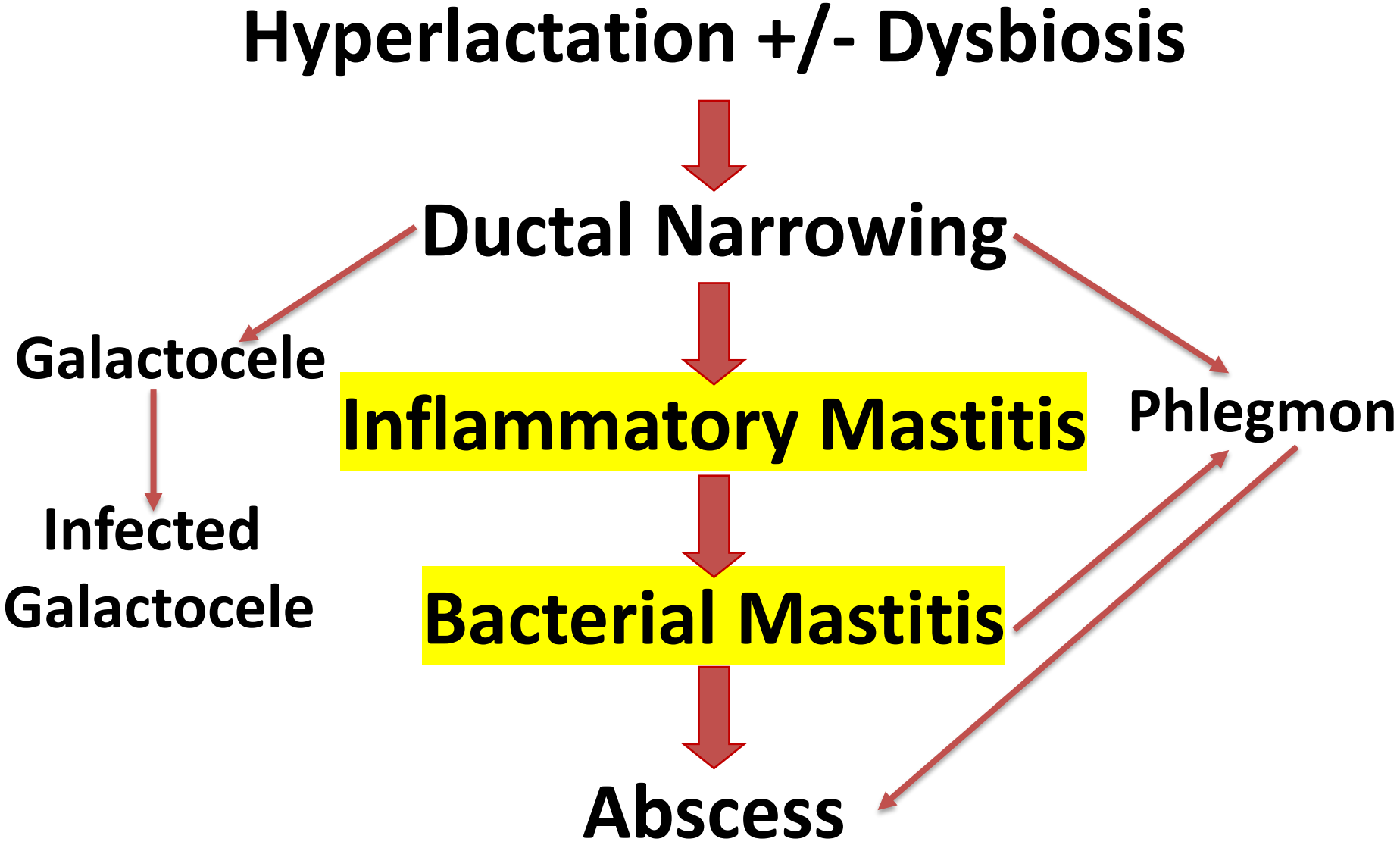
Lobule with Central Duct

fat (white)

fibrous tissue (pink)

Ductal Narrowing Risk Factors

- Non-physiologic feeding
  - Nipple shields
  - Pumping
- Hyperlactation ("oversupply")
- Dysbiosis
  - Blebs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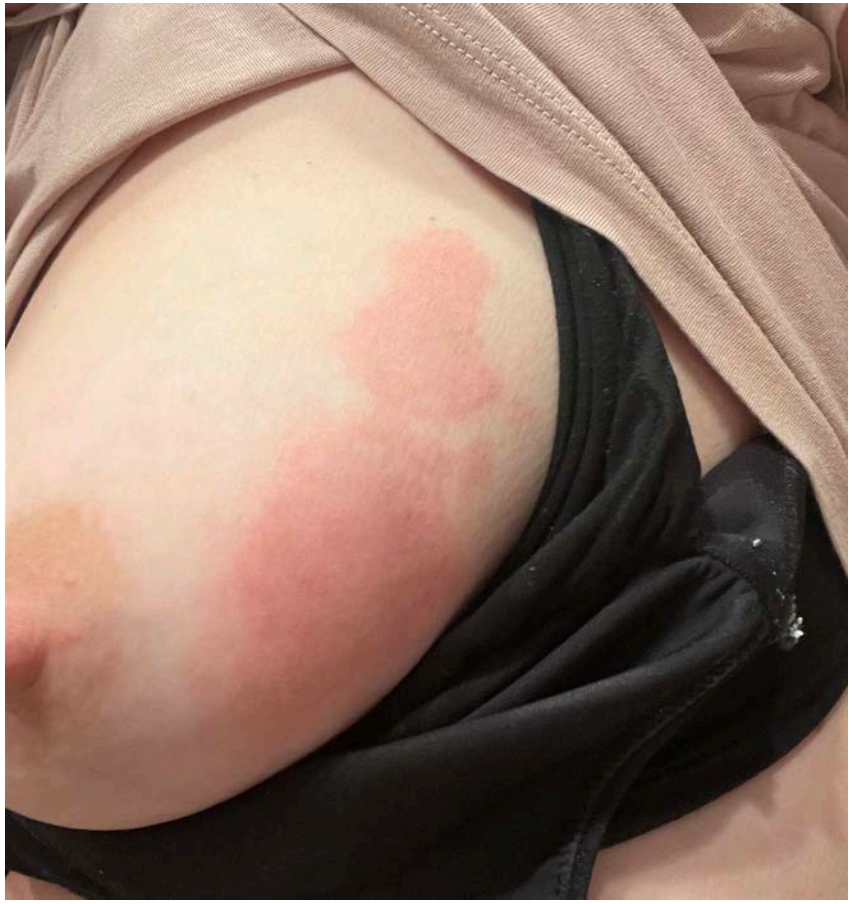
Inflammatory Mastitis

- Breast pain and redness
  - Inflammation
  - If true INFECTION, becomes much more beefy read with cellulitis-like changes
- Systemic symptoms
  - Lactating breast very metabolically active
  - Muscle aches, flu-like symptoms, headache, fatigue, tachycardia
  - It is NOT possible to develop an infection in 12 hours (e.g. baby sleeping overnight)
  - What IS possible is congestion of lymphatics, capillaries, inflammation, pain

Red is NOT Always Infectious!

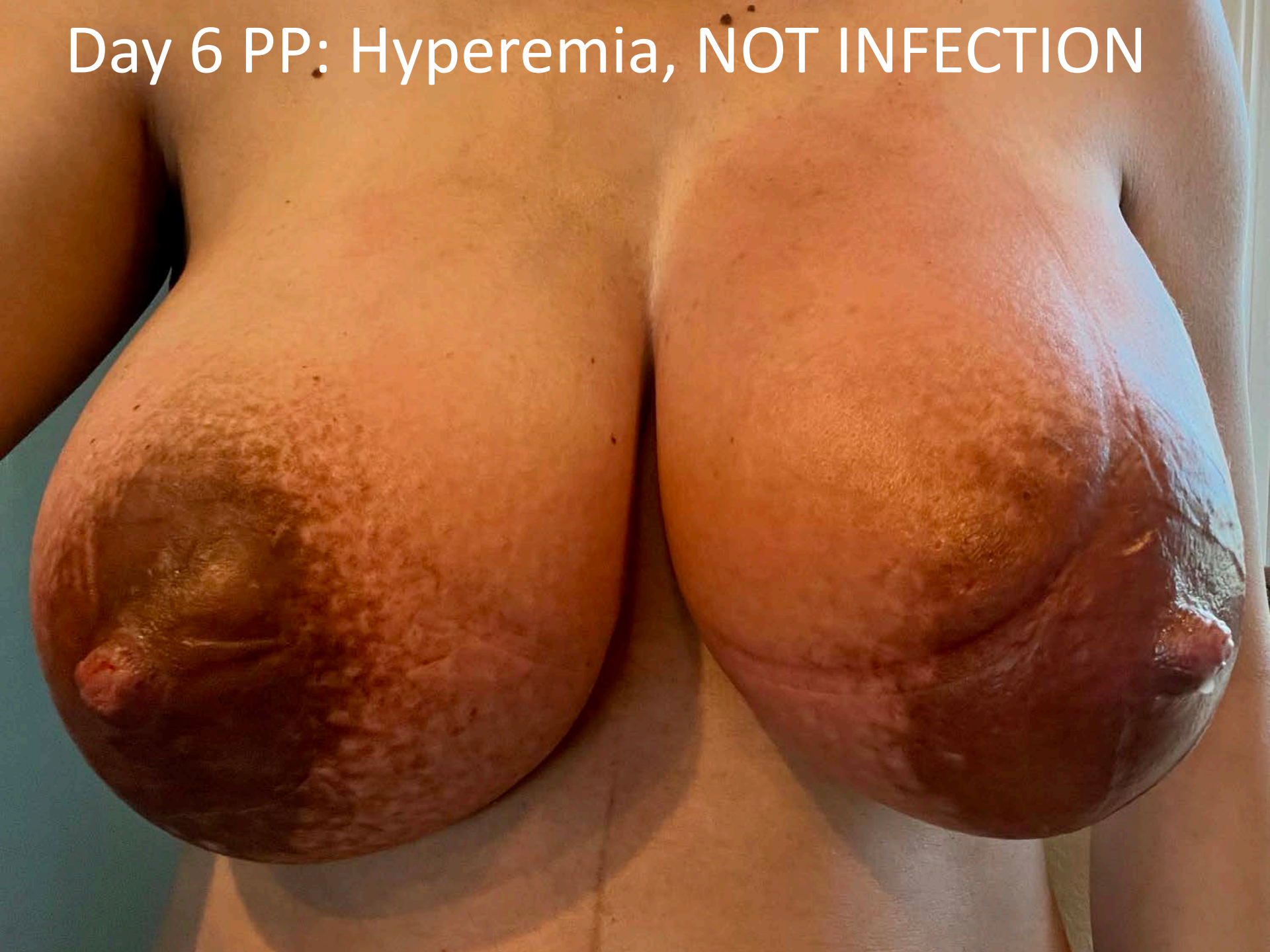
- Hives
- Dermatitis
- DVT (blood clot)
- Sprained ankle
- Other things that cause fever and tachycardia
  - SIRS, ARDS, paraneoplastic syndrome
  - Panic attacks (think of stage fright with shaking and sweating or a dog or cat at the vet anxious, sweating, and panting)



Hyperemia, NOT INFECTION

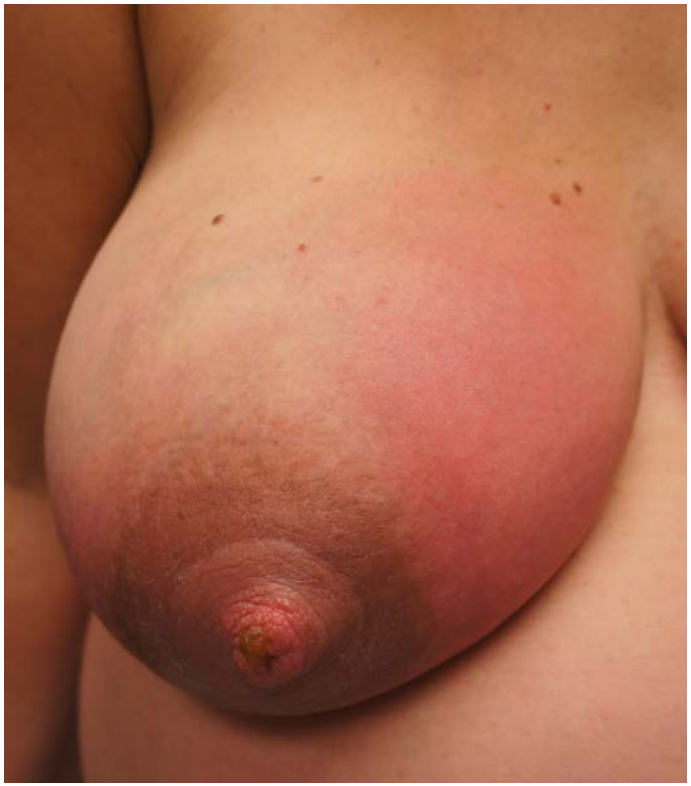
- Unilateral iatrogenic hyperlactation
  - No feedback inhibition
- Patient instructed to feed or pump “to empty” after first episode mastitis
- Developed recurrent mastitis

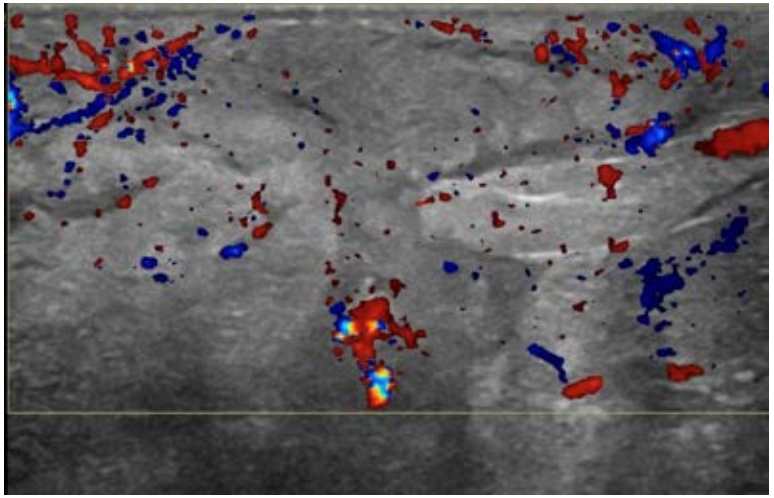
Day 6 PP: Hyperemia, NOT INFECTION



Bacterial Mastitis

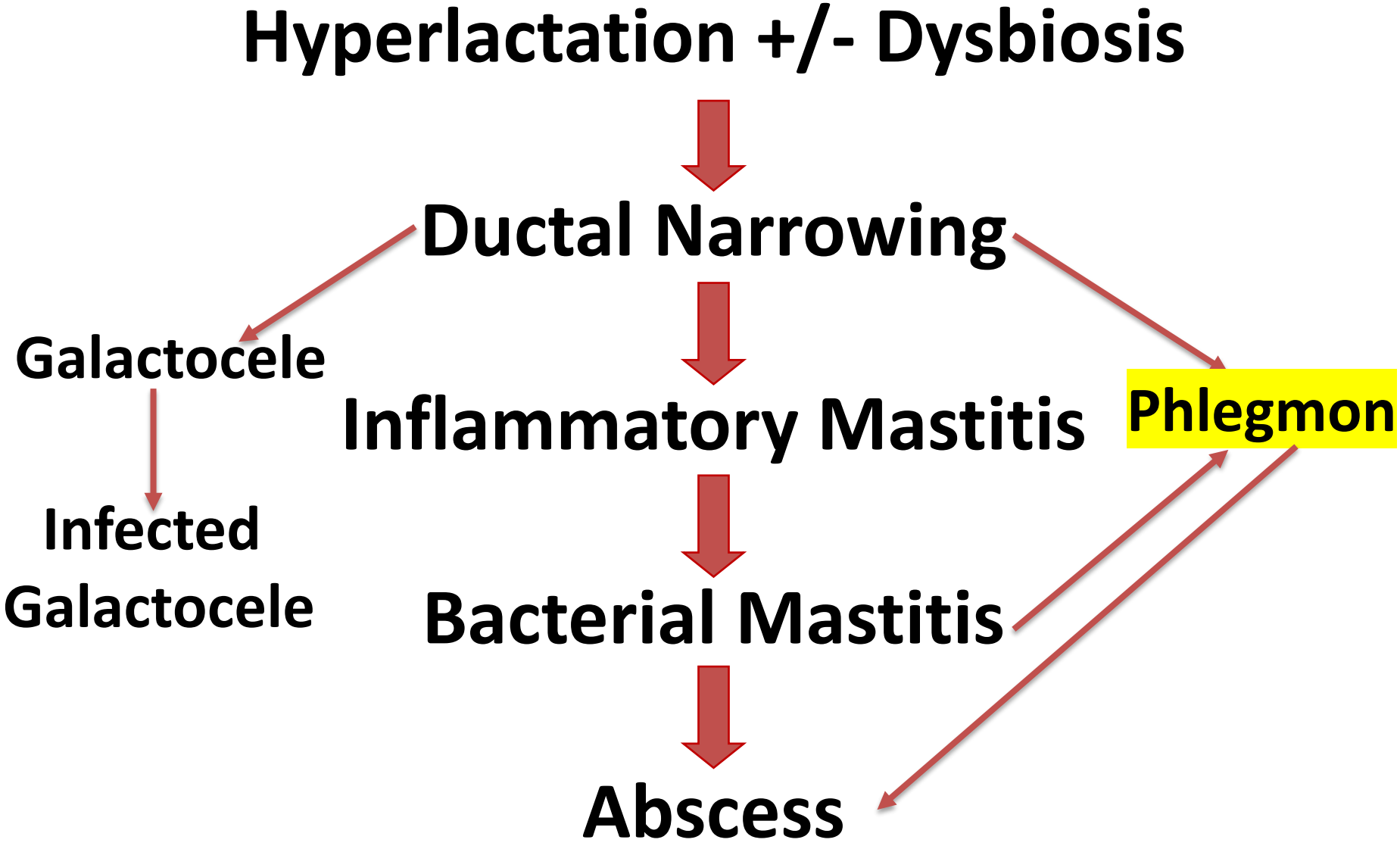
- Beefy red, indurated skin
- Worsening systemic symptoms that do not resolve within 24-48 hours of **appropriate** conservative treatment
- Vast majority of the time, the patient has been told to pump, continually breastfeed, massage





Bacterial Mastitis

- Not contagious
- No basic science evidence to support poor hygiene or “being run down”
  - Likely an association that a mom is exhausted, she starts to feel some breast pain, massages and overpumps and then develops true mastitis
- No basic science evidence for “candida mastitis”
- Nipple trauma is association, not cause and effect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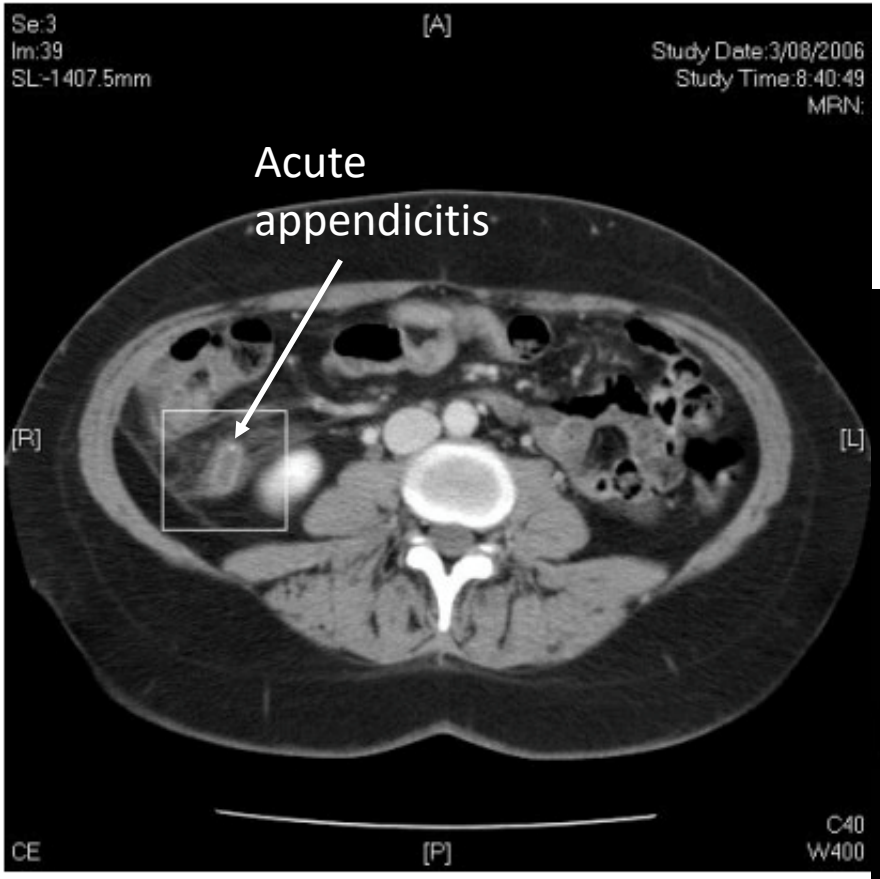
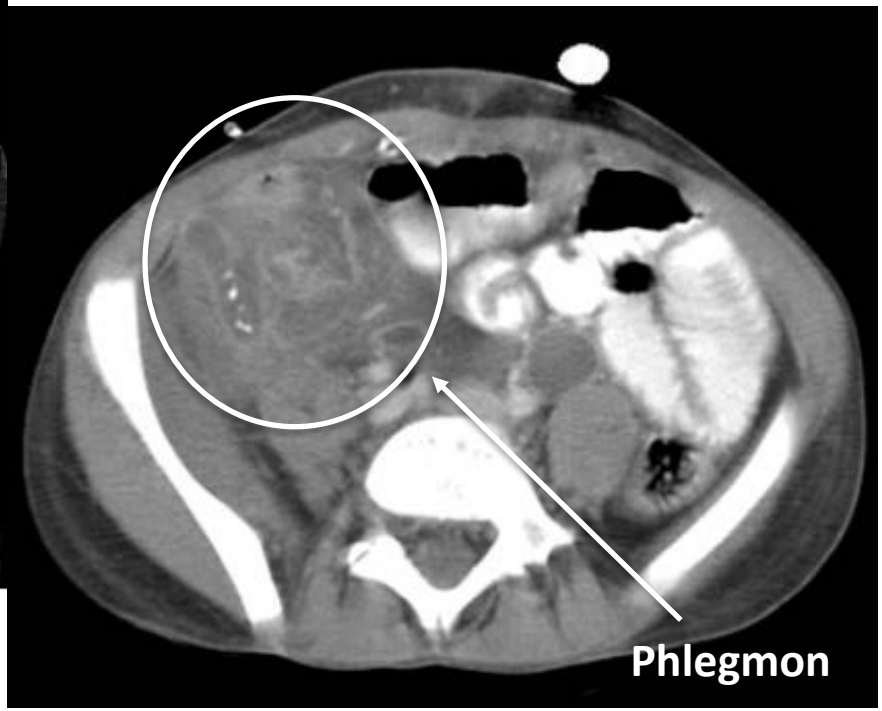
Phlegmon



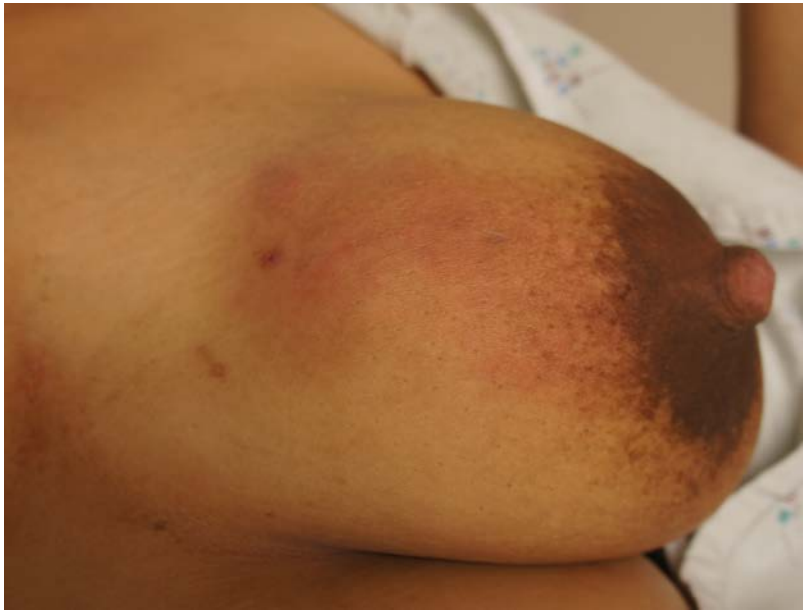
- Purulent inflammation and infiltration of connective tissue

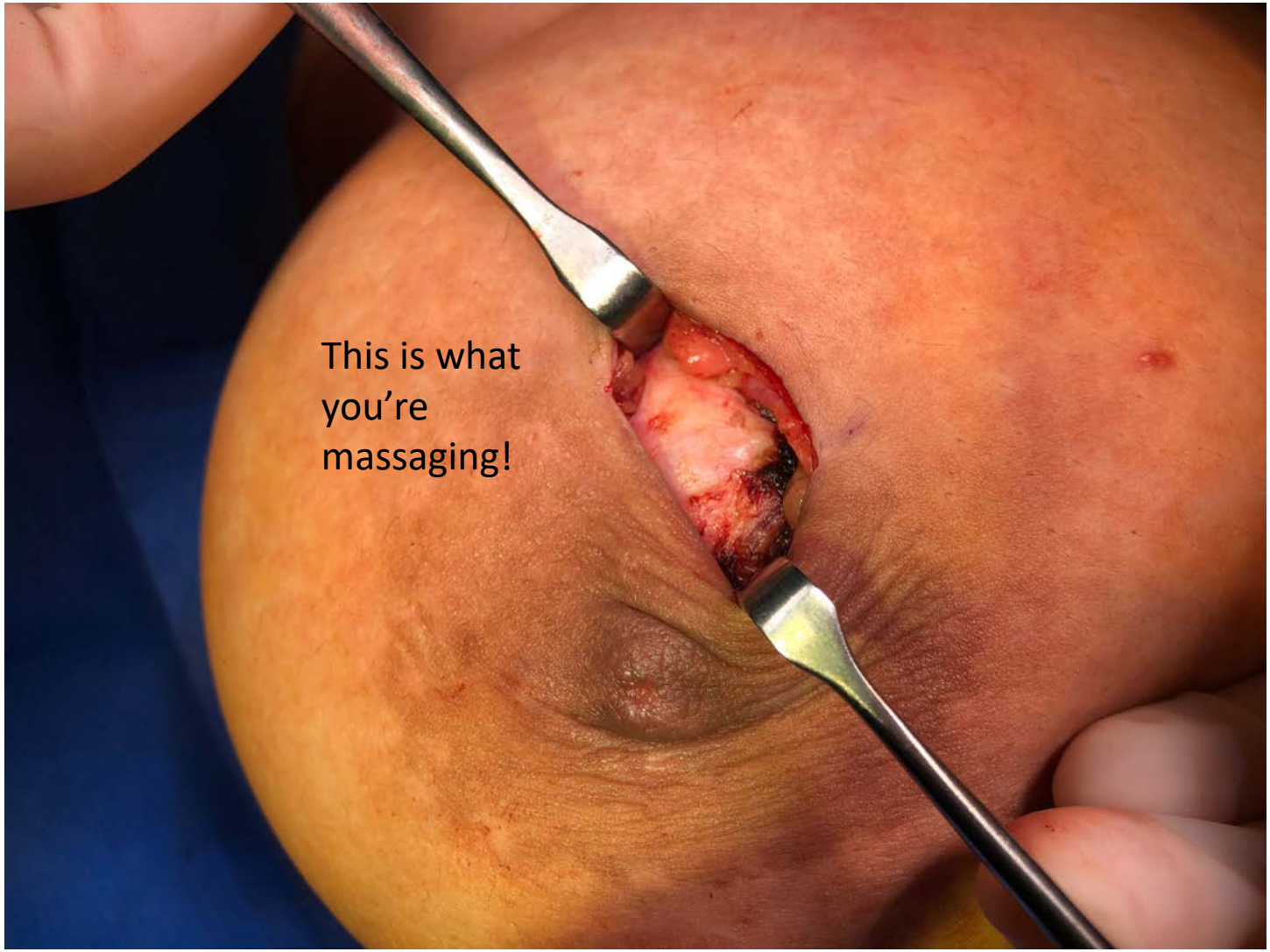


Emergency Diagnostic Radiology, Radiopaedia.org

Lactational Phlegmon

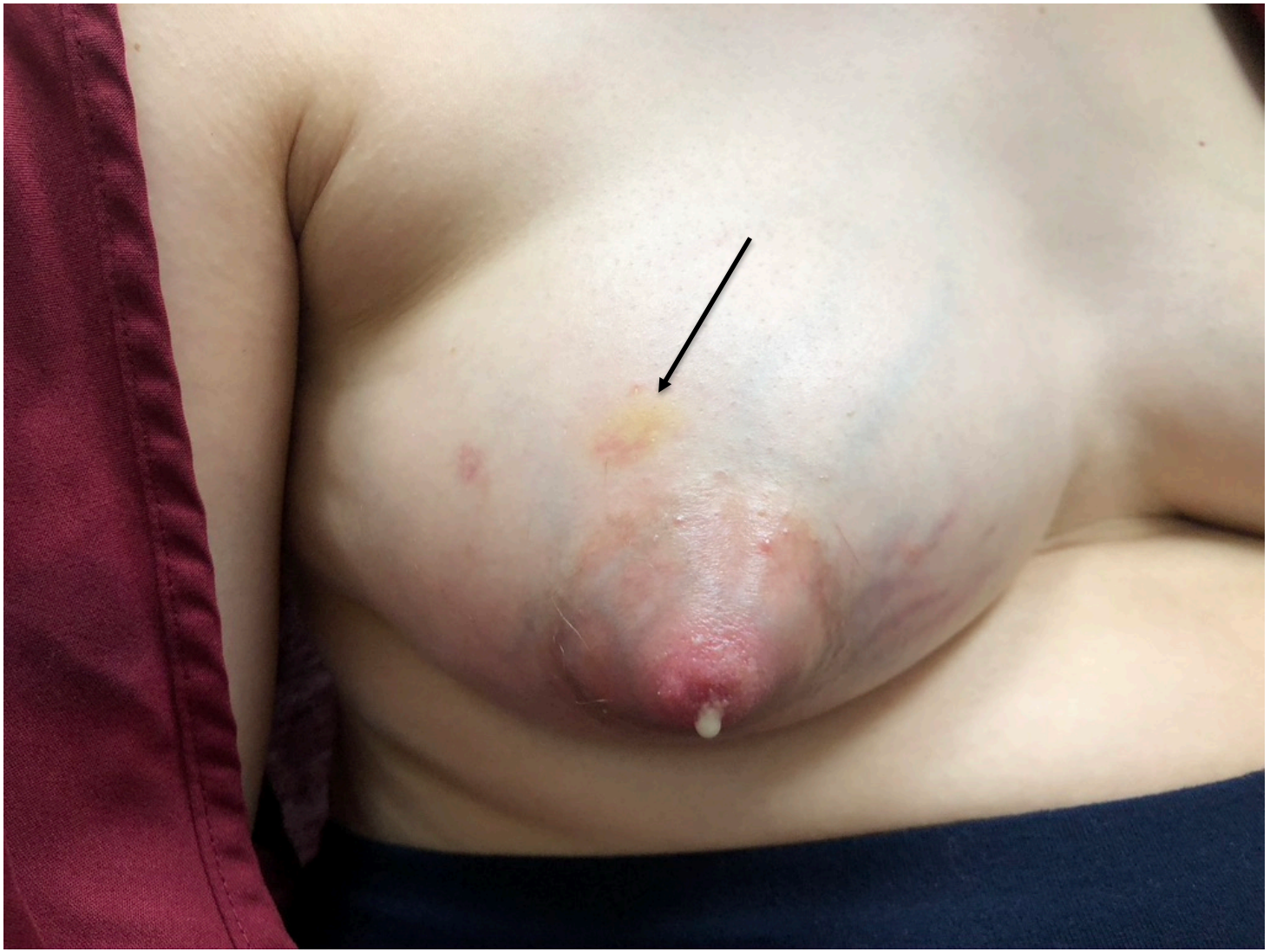
- Complex mass without drainable collection
- Results from massage of breast in the setting of inflammatory or bacterial mastitis
- Capillary injury, edema, tissue inflammation
- With or without overlying erythema



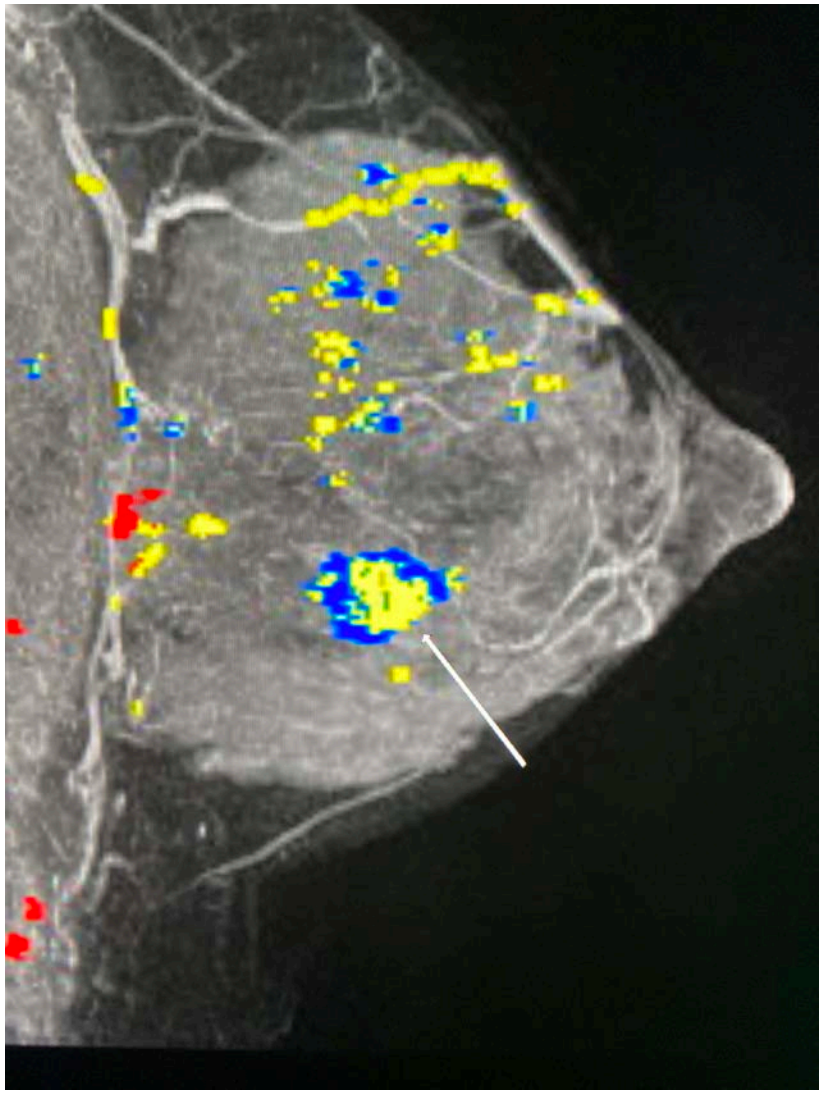


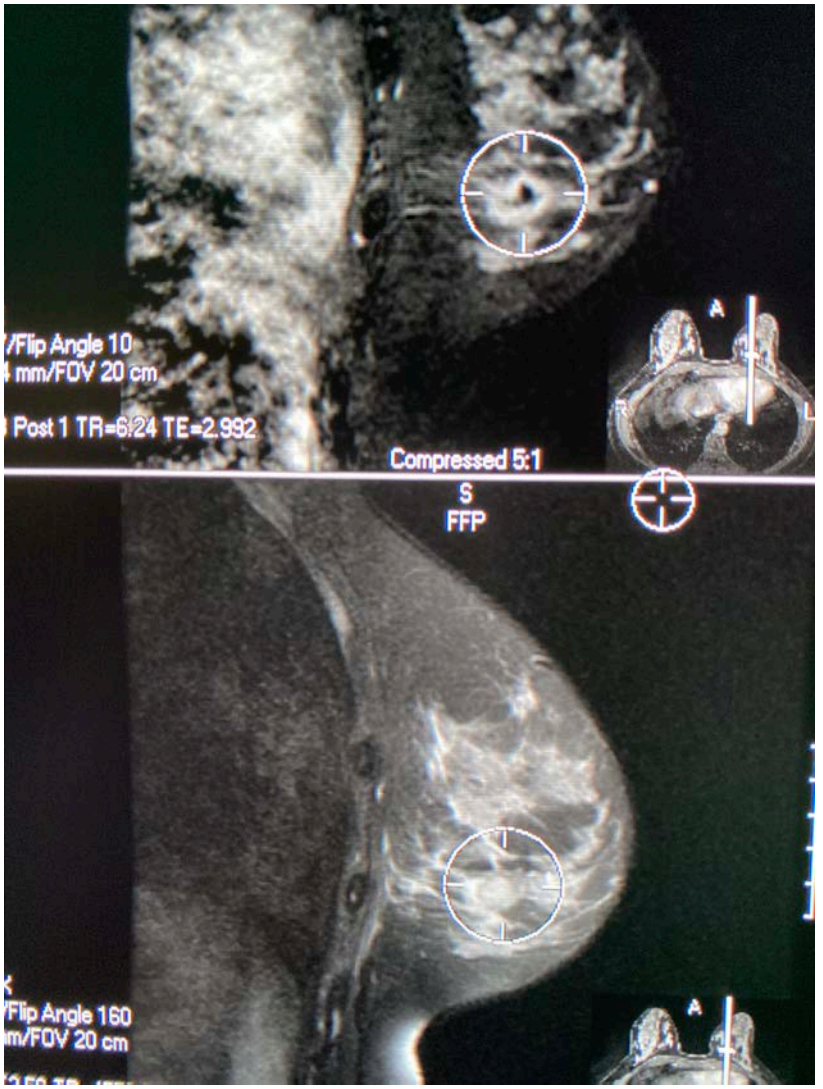
Phlegmon: Result of Massage

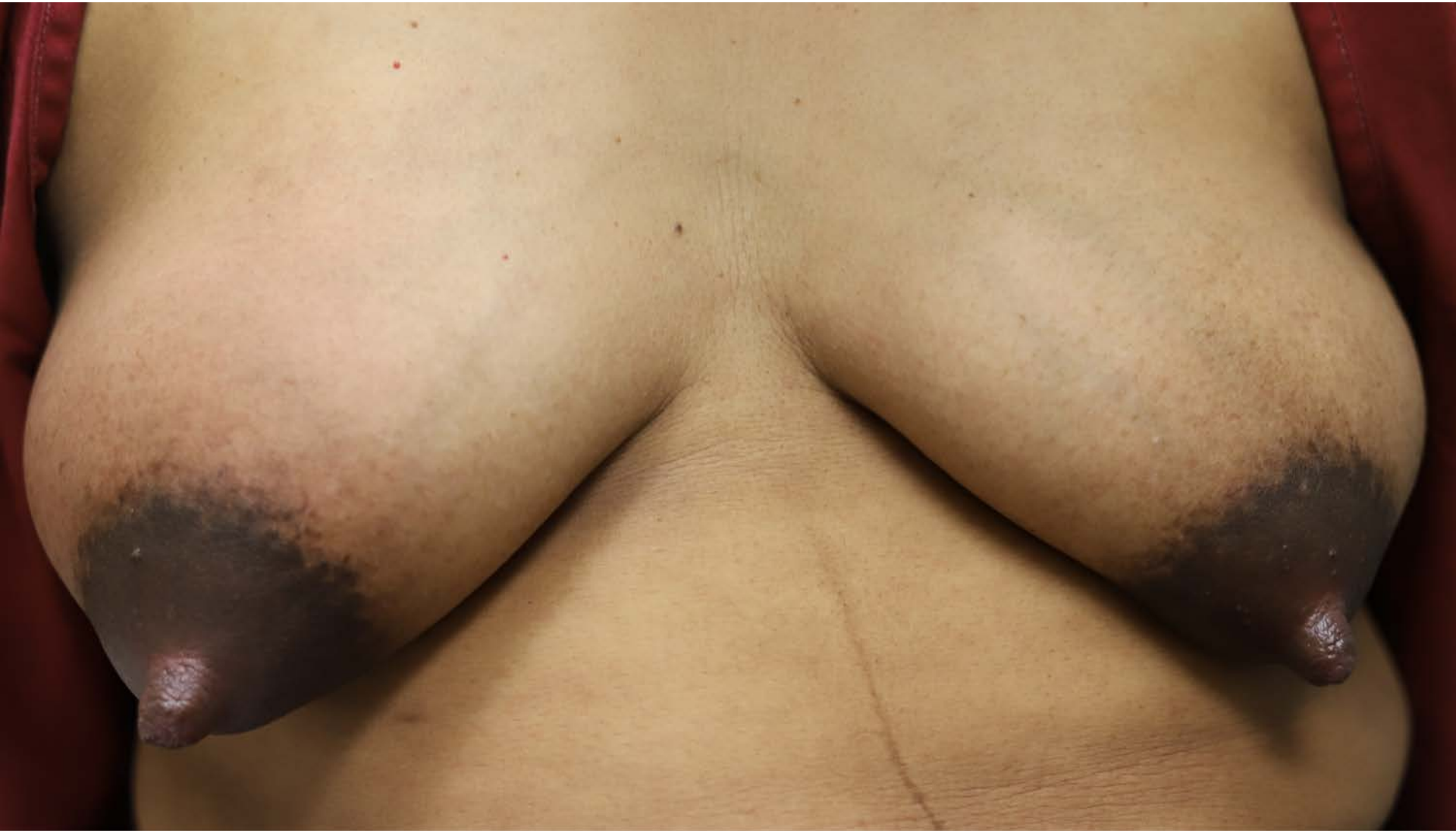
Bruising from Massage

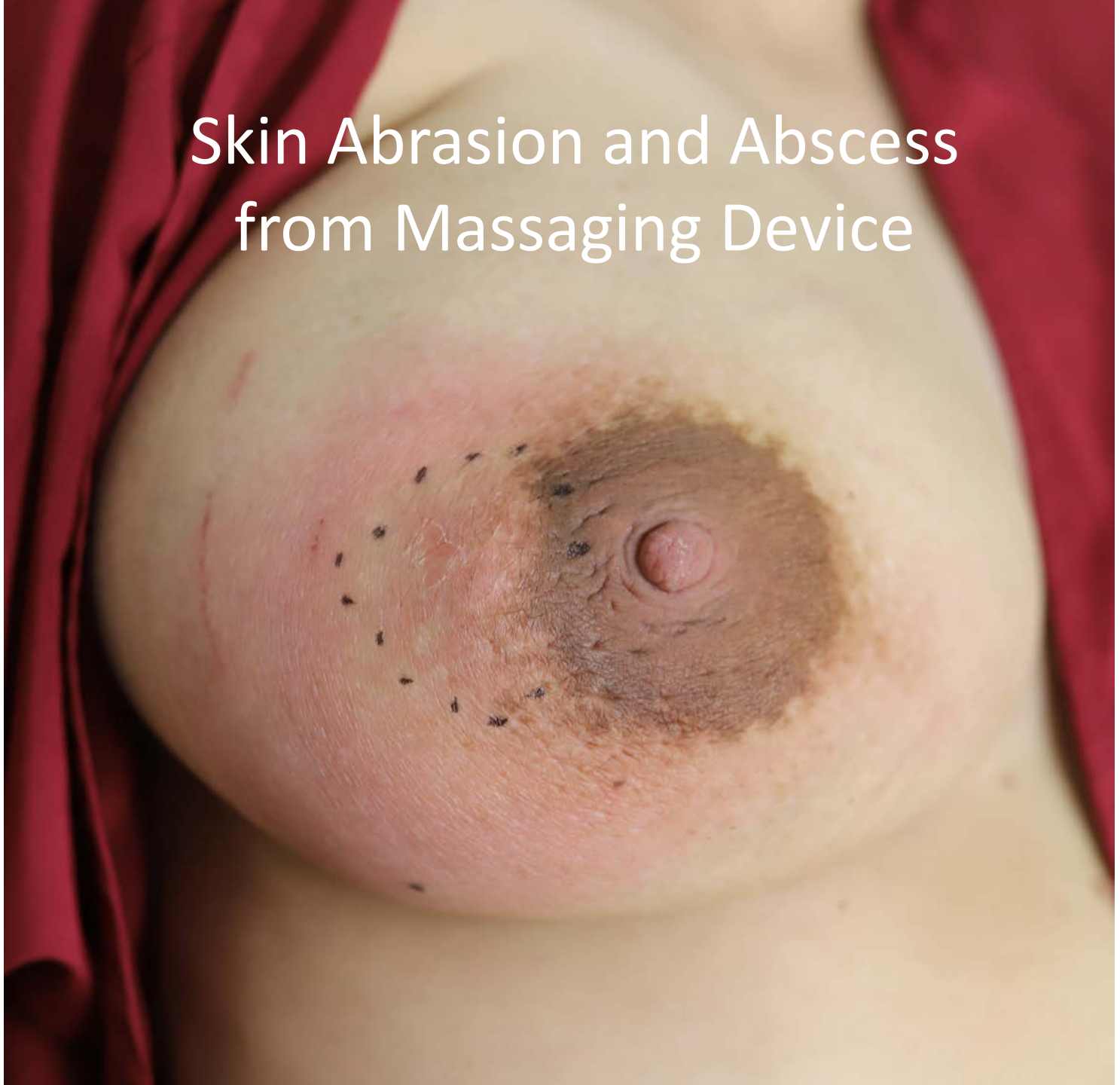


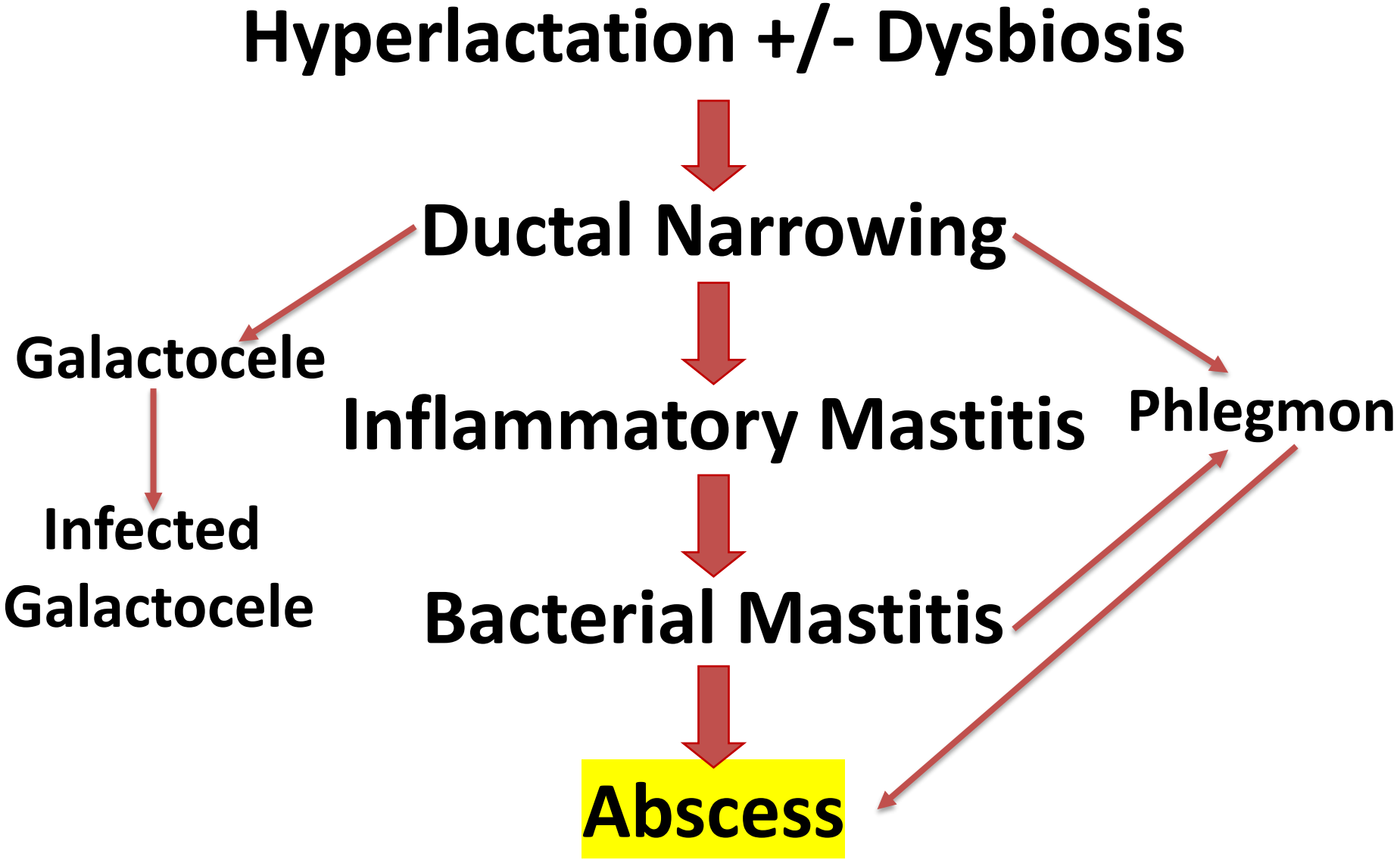
MRI Appearance of Phlegmon





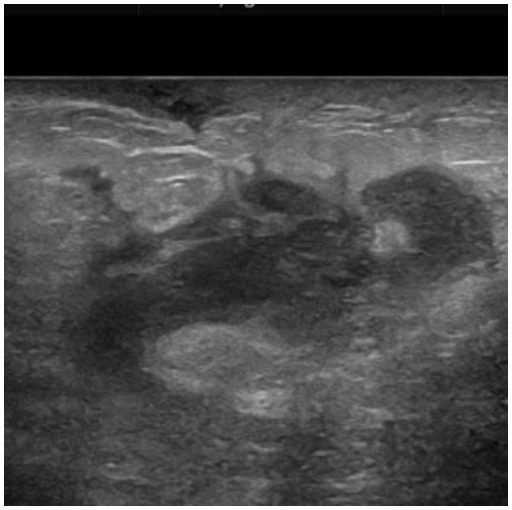


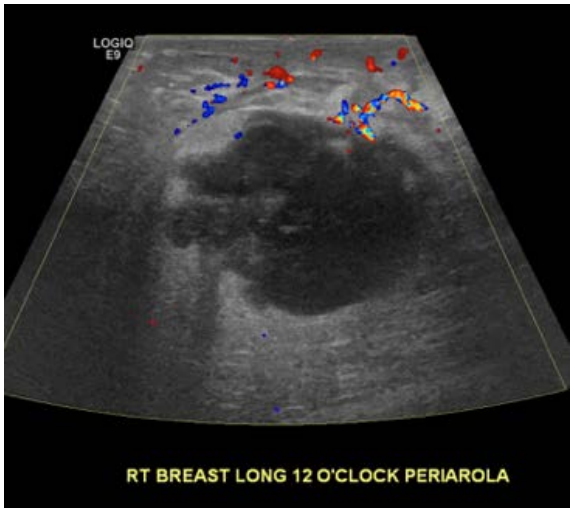

Skin Abrasion and Abscess
from Massaging Device


Hyperlactation +/- Dysbiosis
Ductal Narrowing
Galactocele
Infected Galactocele
Inflammatory Mastitis
Phlegmon
Bacterial Mastitis
Abscess

Abscess

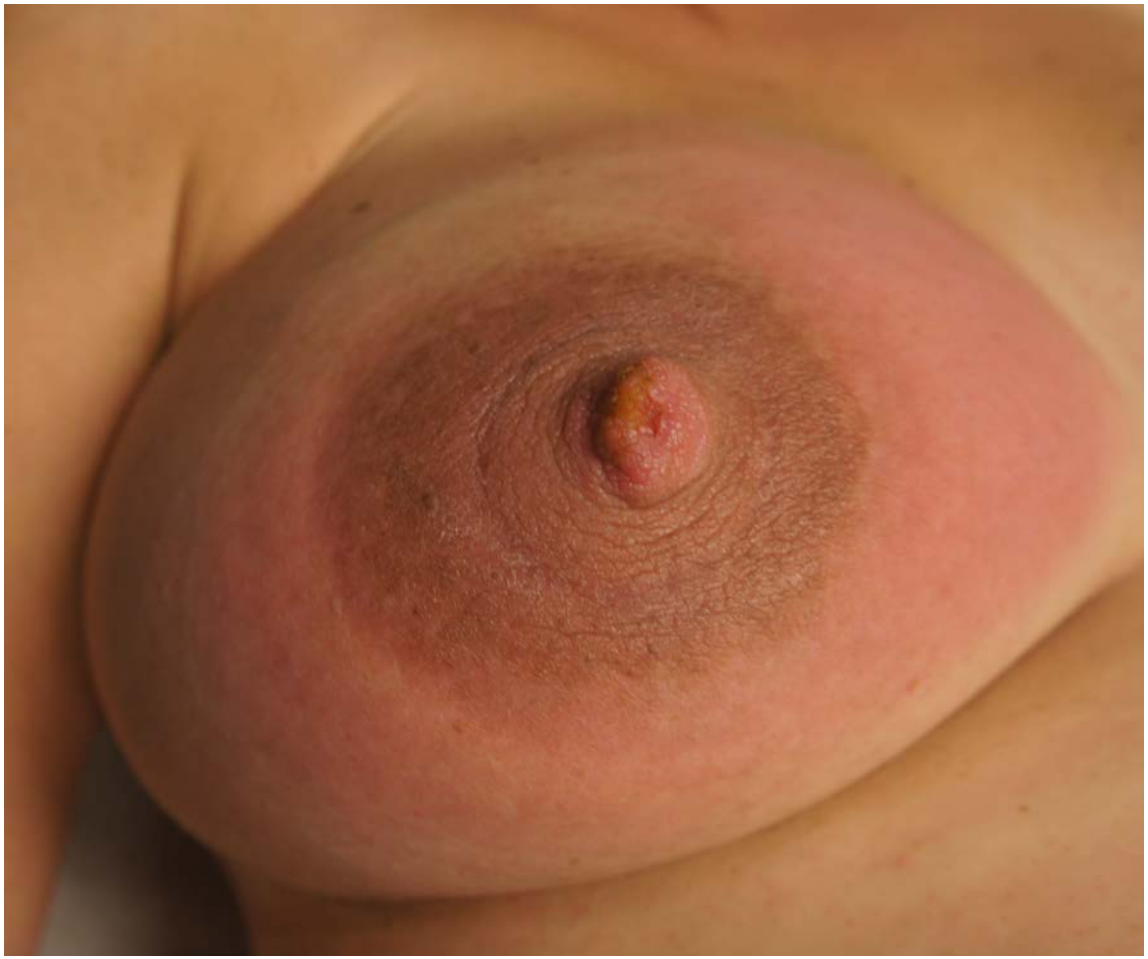
- Often peri/retroareolar
- Risk factors
  - Massage, hyperlactation, pumping, nipple shields, delayed or inadequate treatment of mastitis
- May not have systemic findings
- Evaluation
  - Physical exam
  - +/- ultrasound

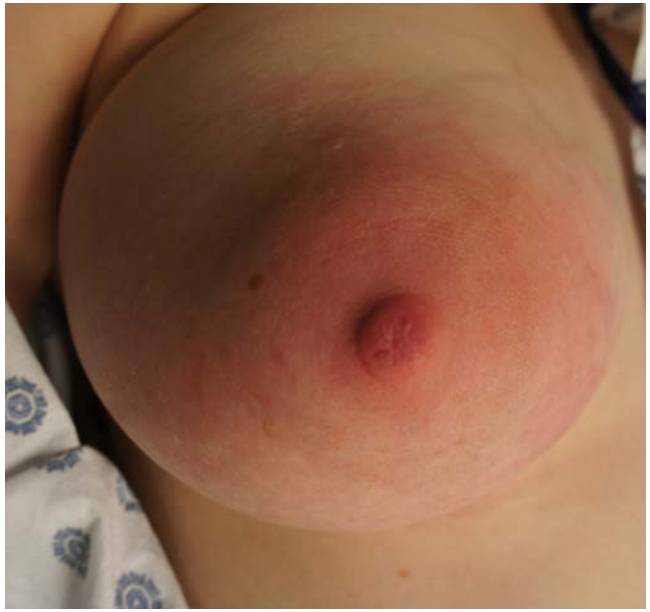




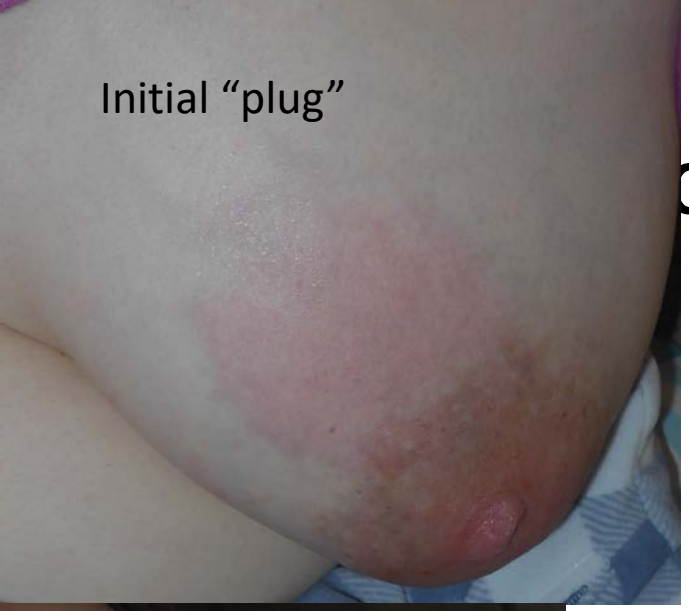
Cottrell et al J Diag Med Sono 2016

Retroareolar Abscess in Setting of Overfeeding in Hyperlactation

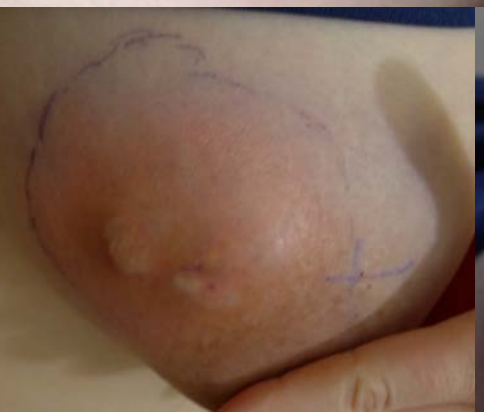


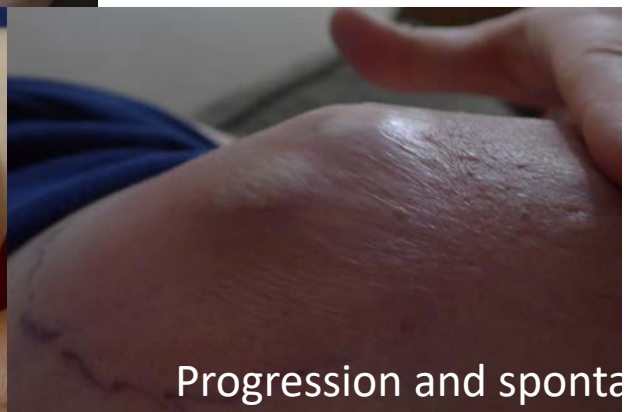


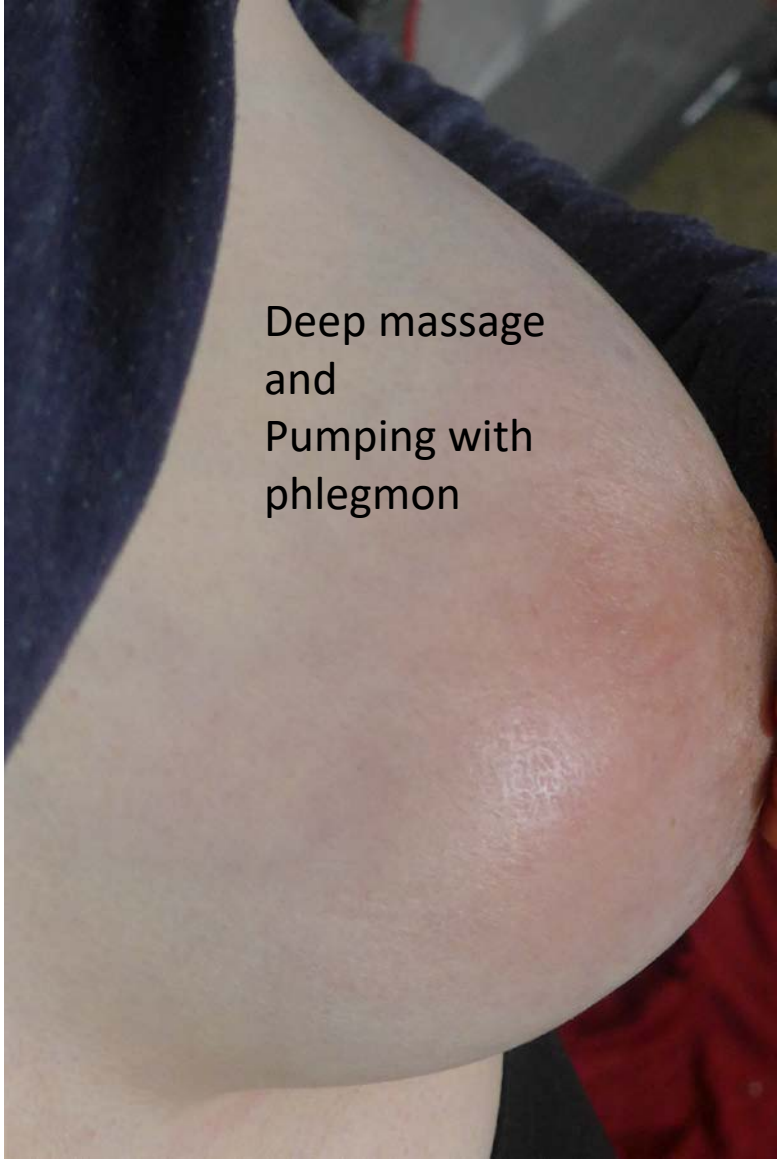
d pumping


Initial “plug”

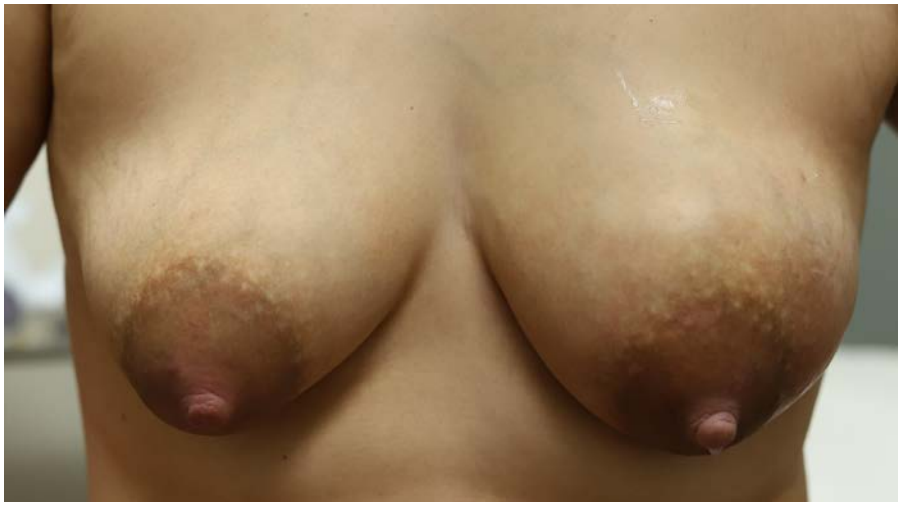

Abscess development ->

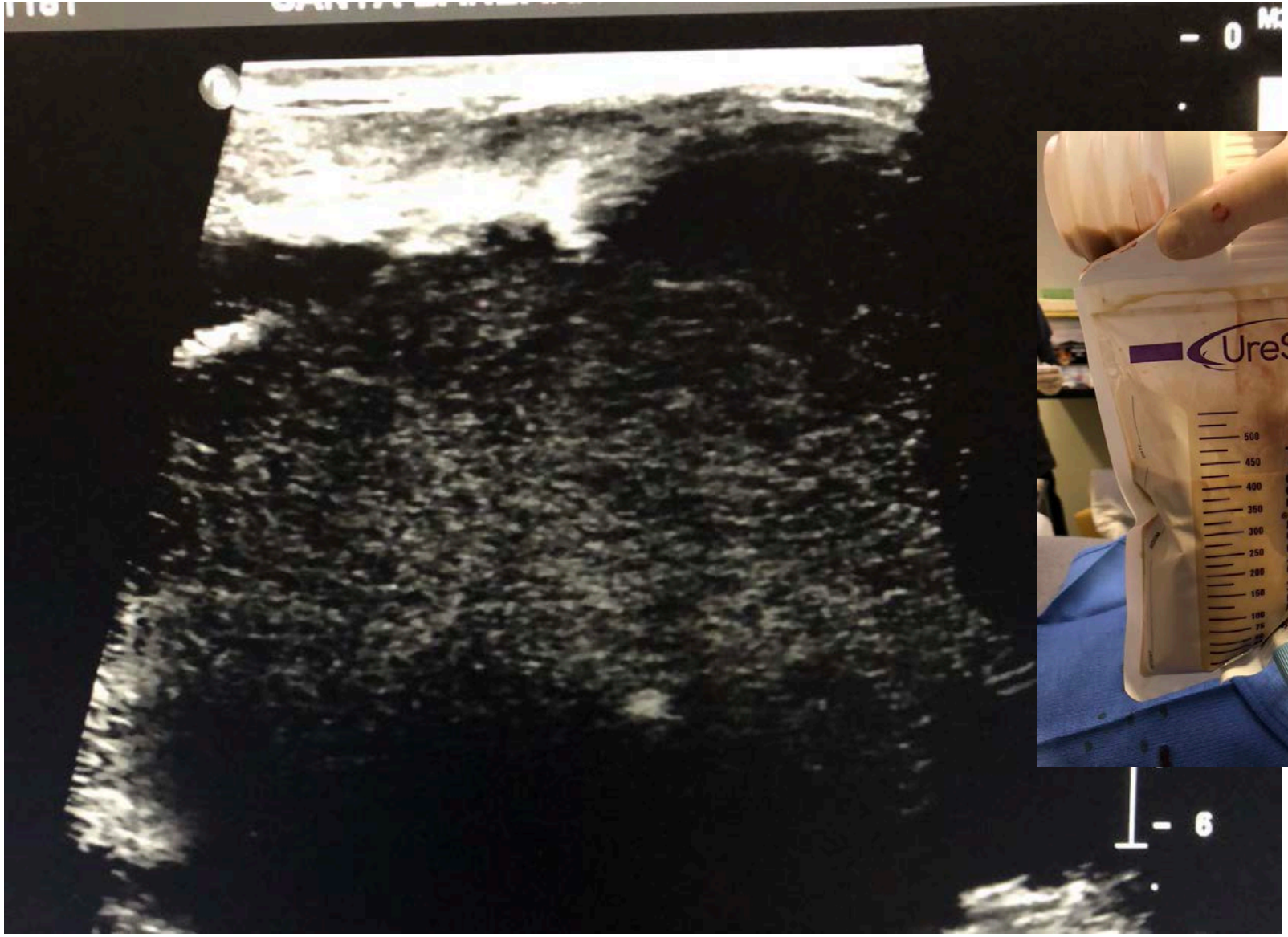



Progression and sponta


Deep massage
and
Pumping with
phlegmon

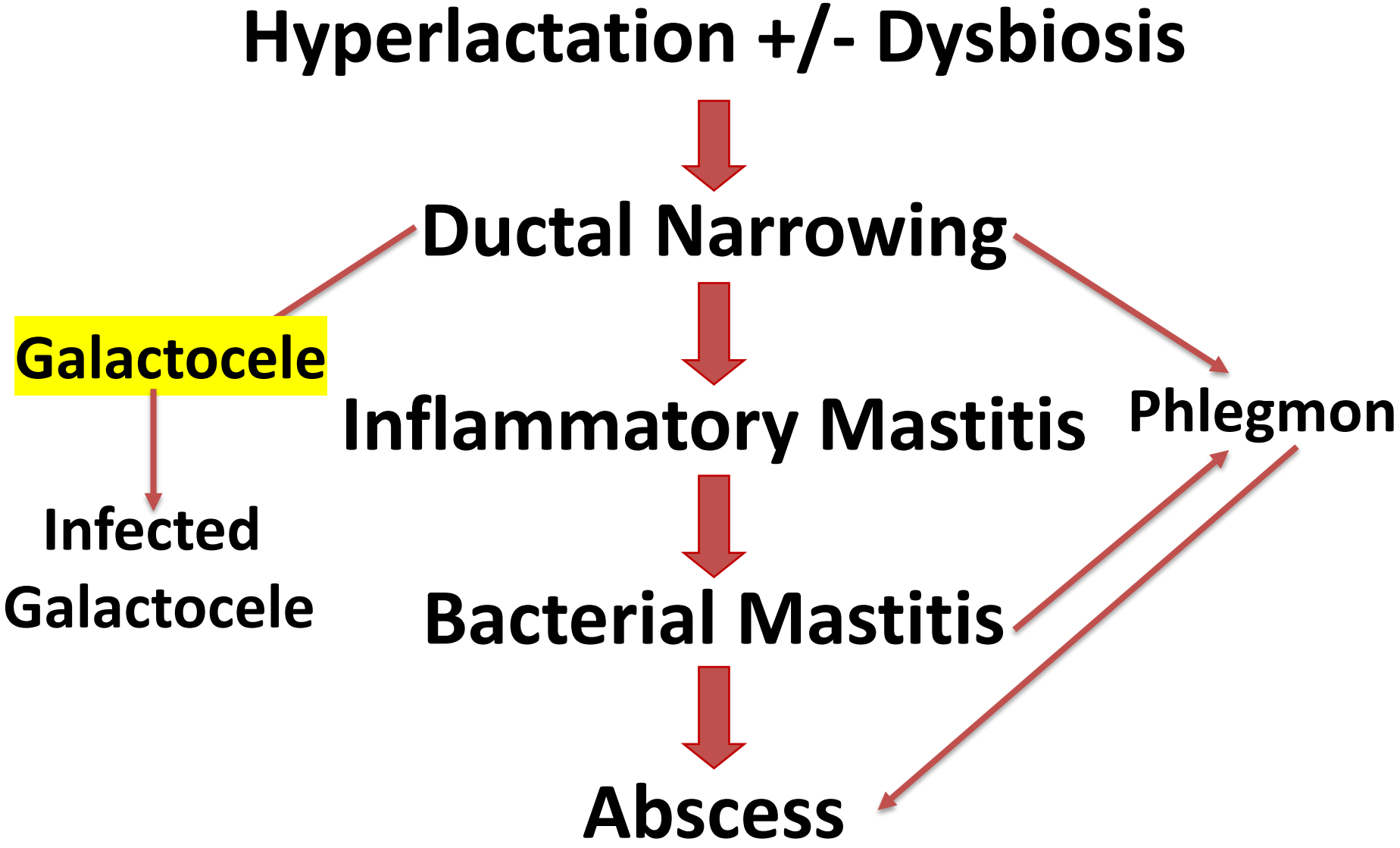
Abscess Development after Massage




0
6

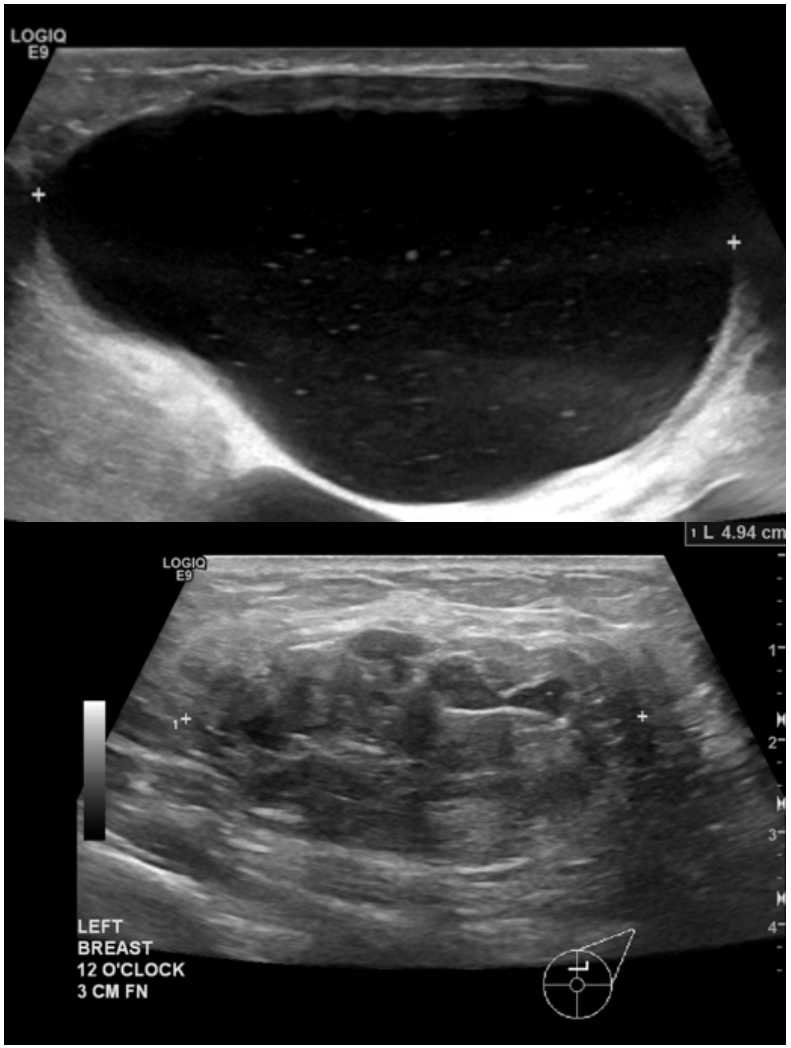
UreSil
TRU-CLOSE® 500 ml
500
450
400
350
300
250
200
150

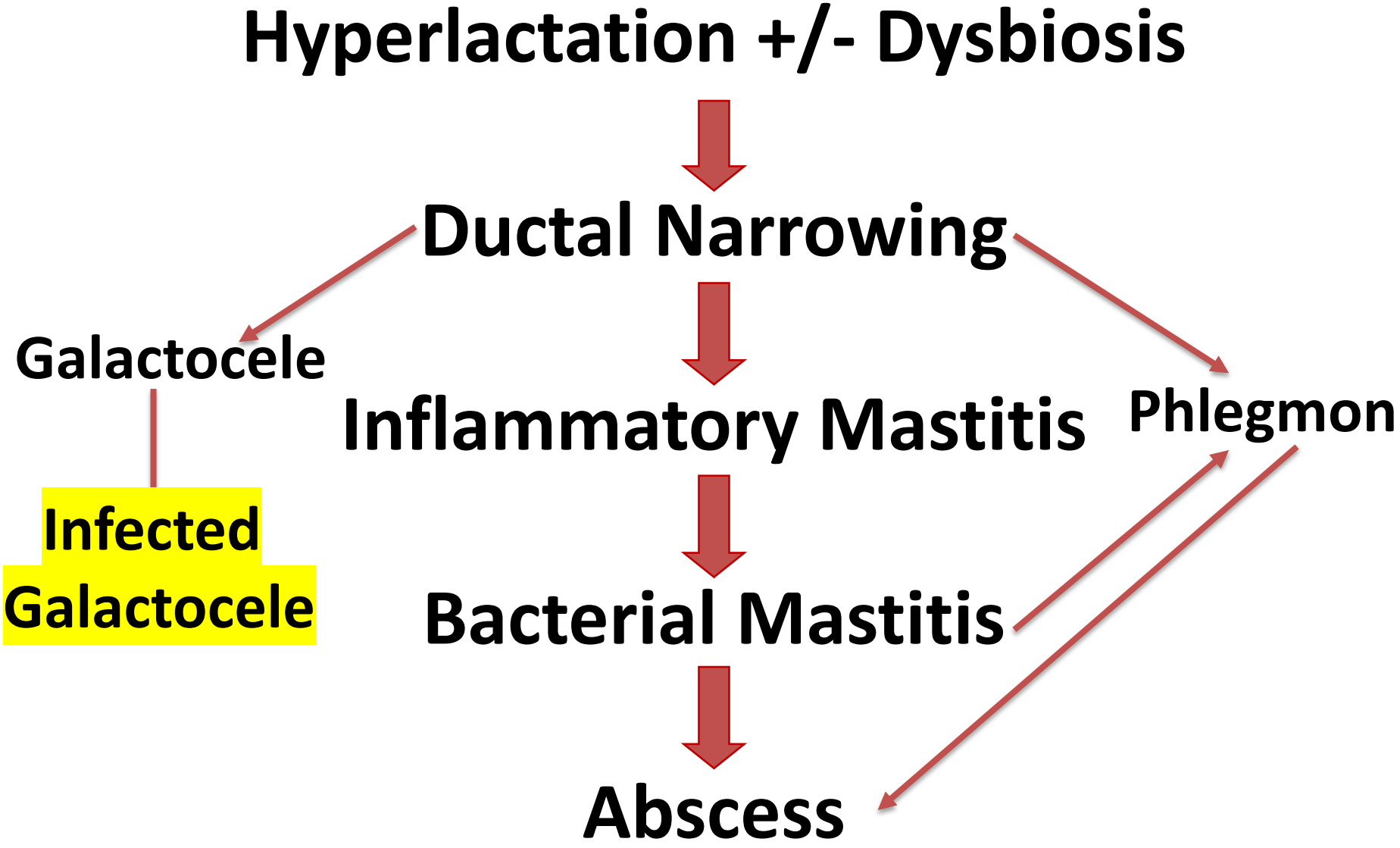
Tissue Necrosis from Repeated Massage


Hyperlactation +/- Dysbiosis
Ductal Narrowing
Galactocele
Inflammatory Mastitis
Phlegmon
Infected Galactocele
Bacterial Mastitis
Abscess

Galactocele

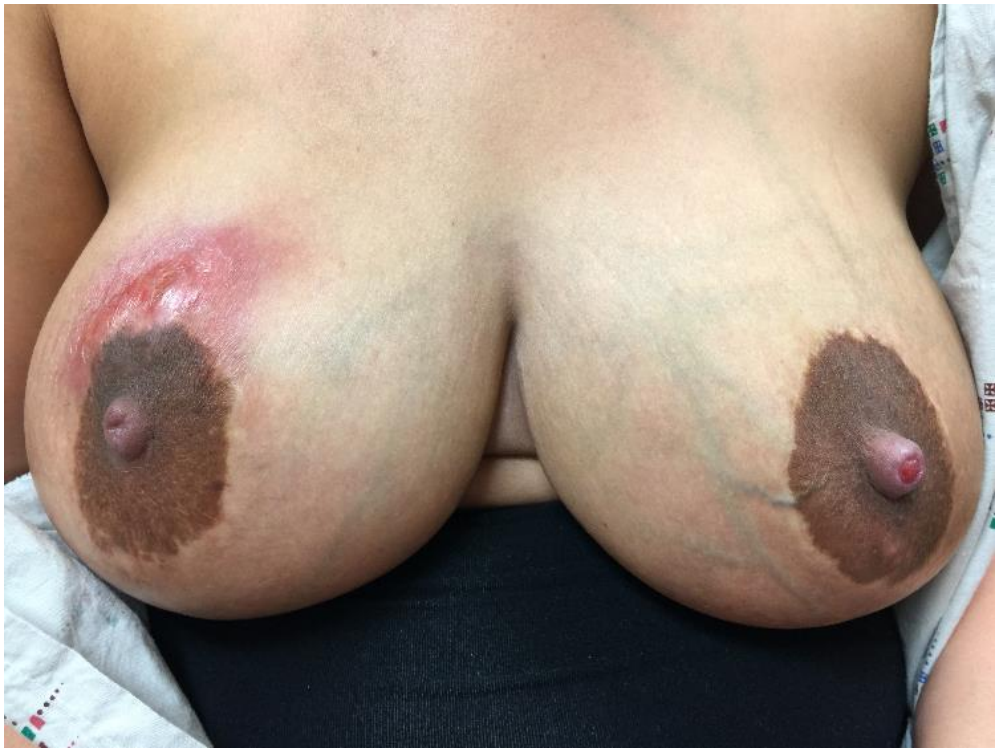
- Milk-filled cyst that can become solid and sticky quickly
- Well-defined lesion on ultrasound but more complex galactoceles can mimic other lesions



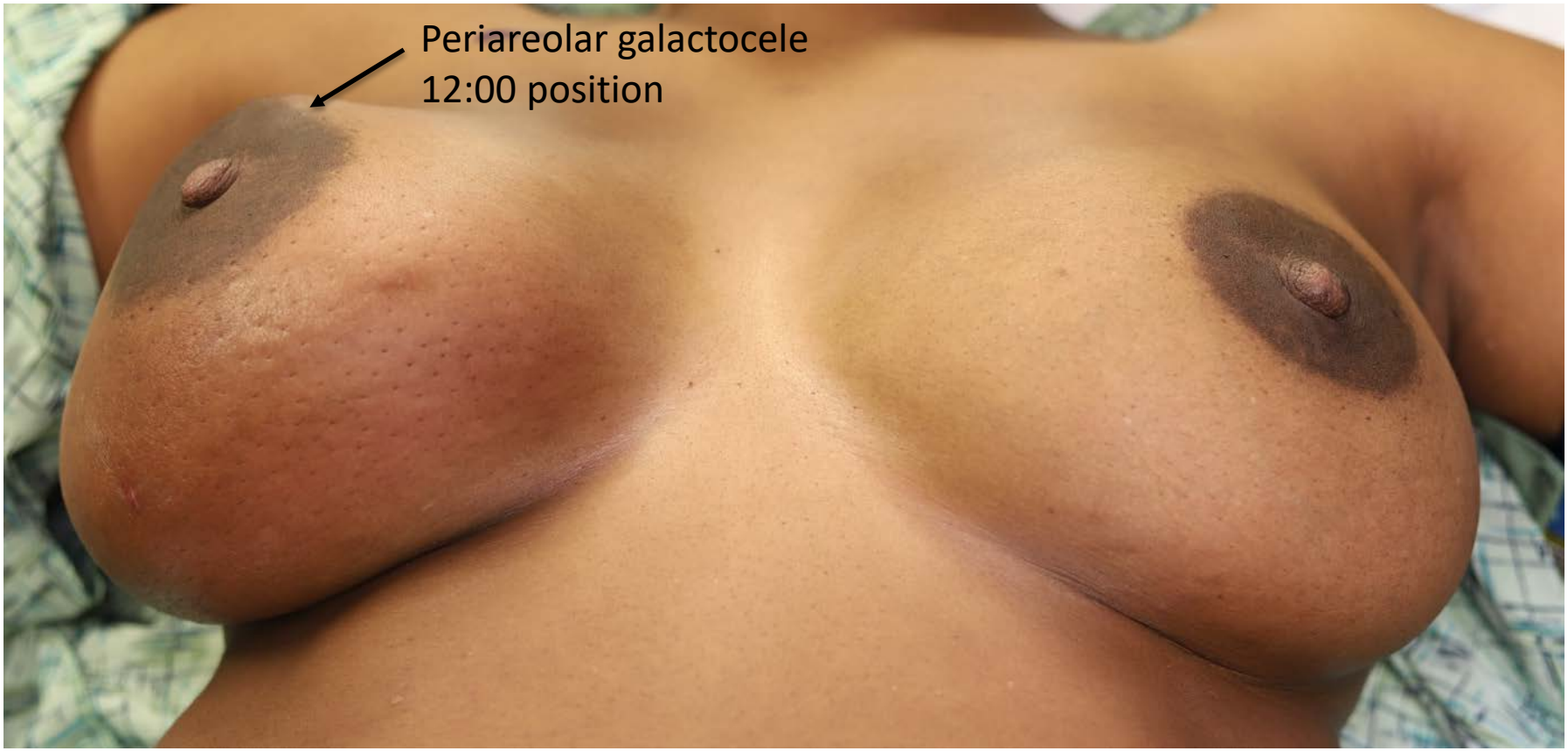

Hyperlactation +/- Dysbiosis
Ductal Narrowing
Galactocele
Inflammatory Mastitis
Phlegmon
Infected Galactocele
Bacterial Mastitis
Abscess

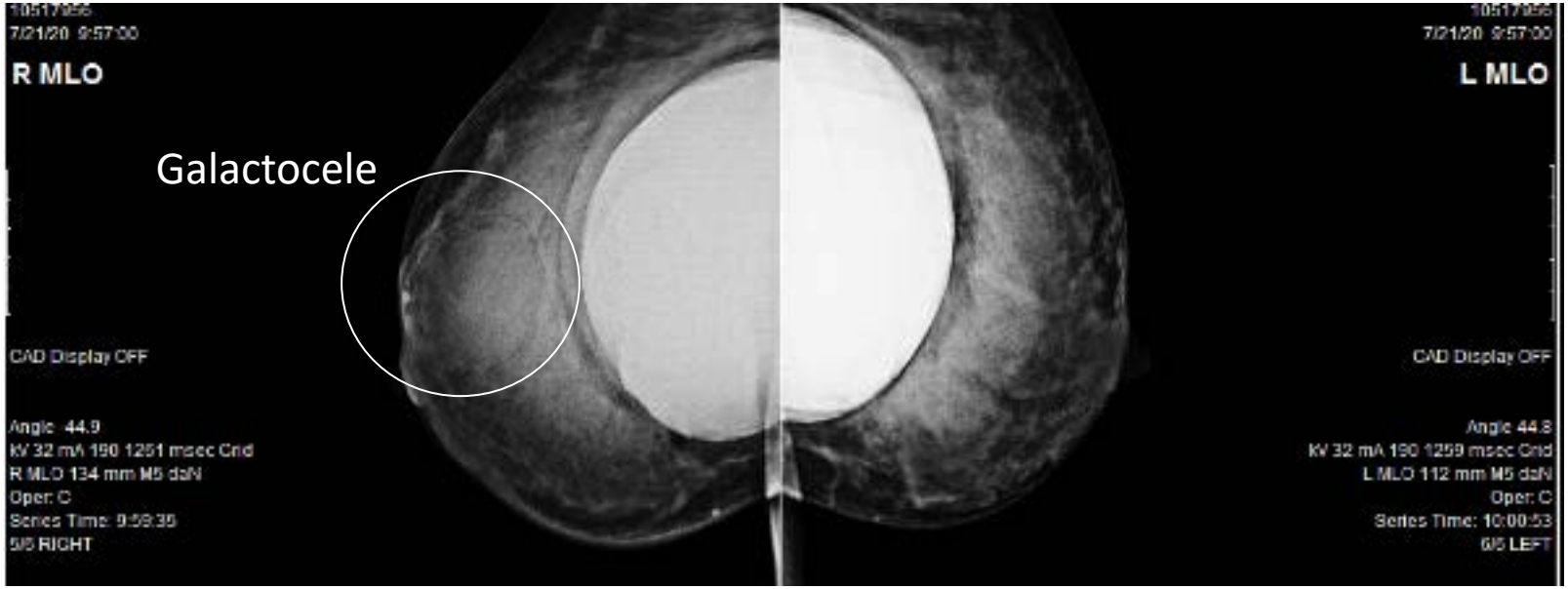
Infected Galactocele

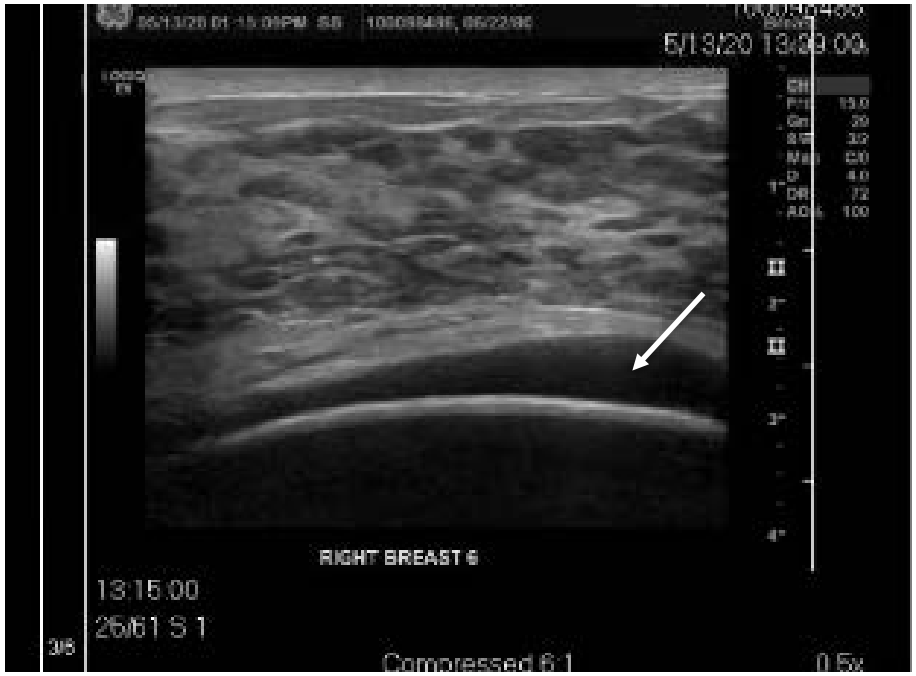
- Repeated aspirations can convert uninfected galactocele to infected galactocele
- Most often, best to offer upfront small drainage catheter



Infected Implant, Abscess, and Right Galactocele



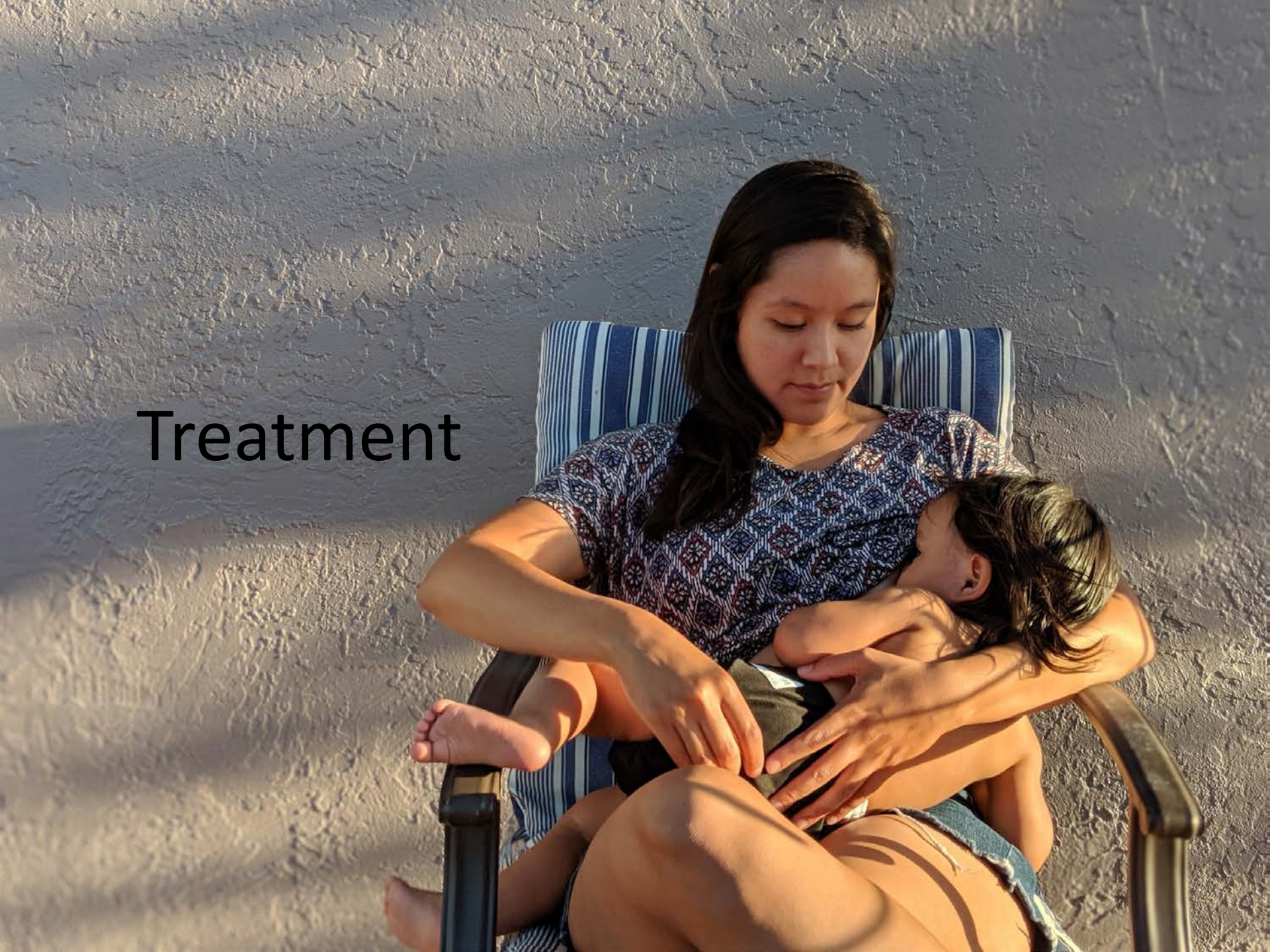




Peri-implant abscess

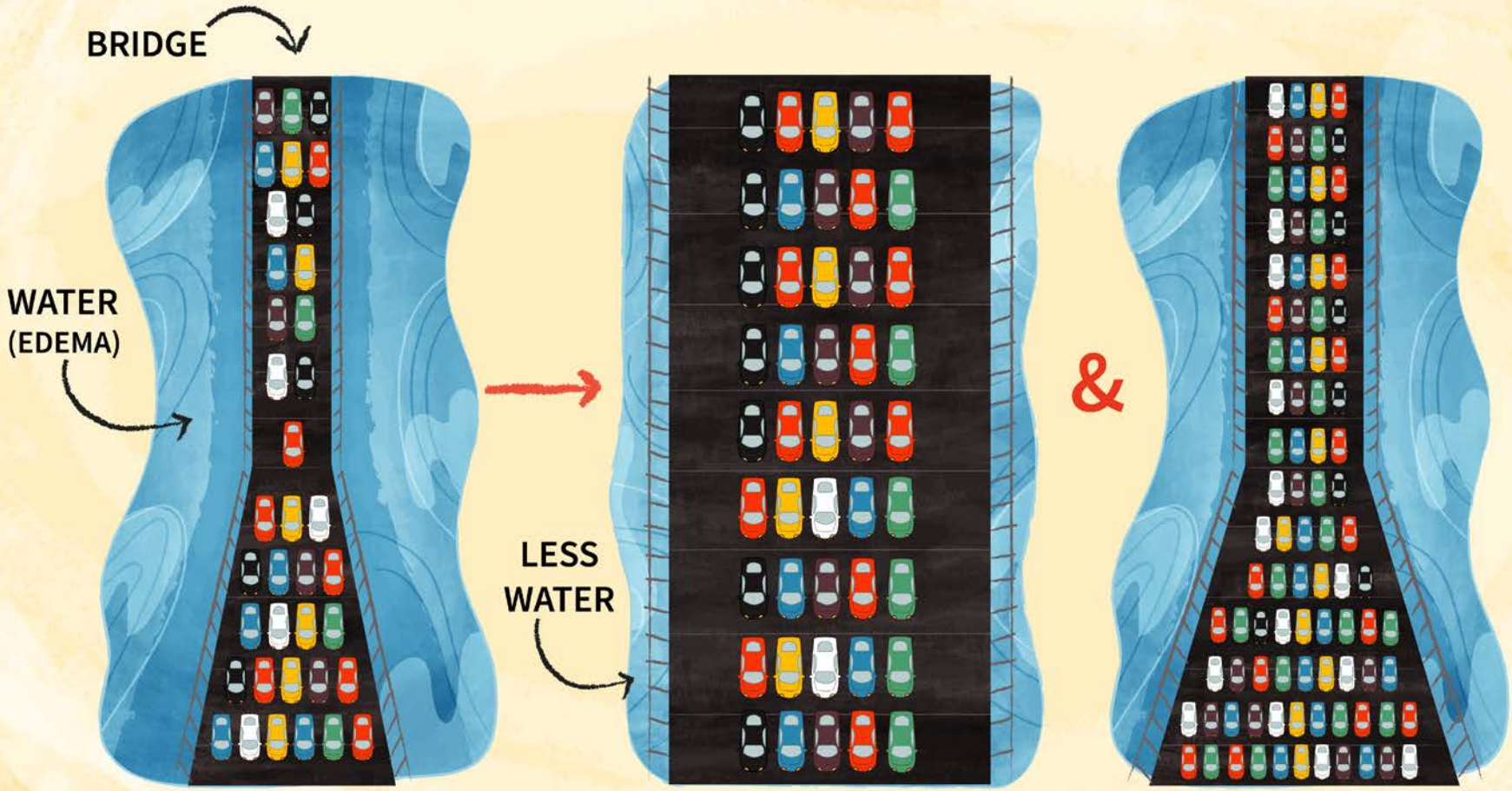
Loculated galactocele

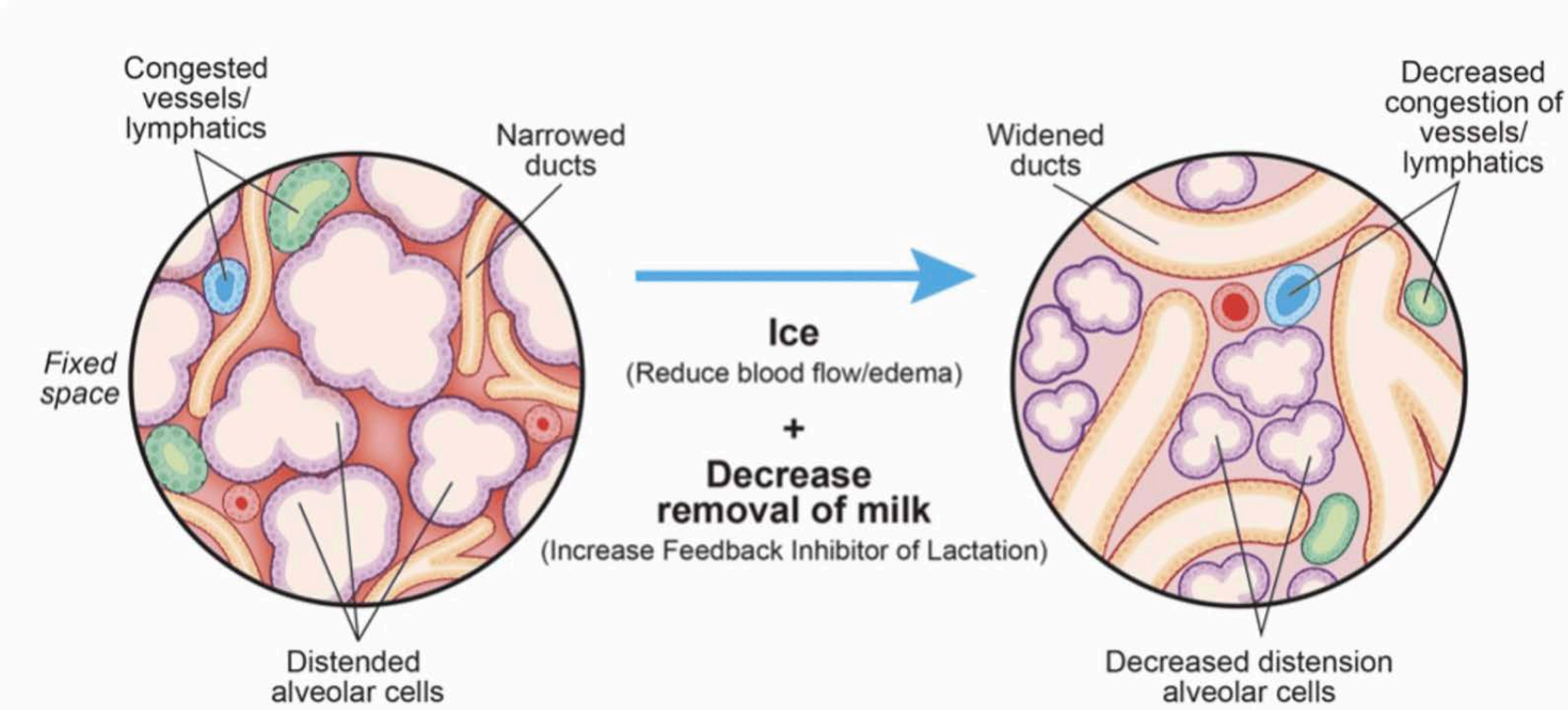
Treatment



PROBLEM

SOLUTIONS





Ice and not overstimulating a breast allows the active cells to down regulate and the ducts to widen from their cramped, collapsed state.

Breast rest

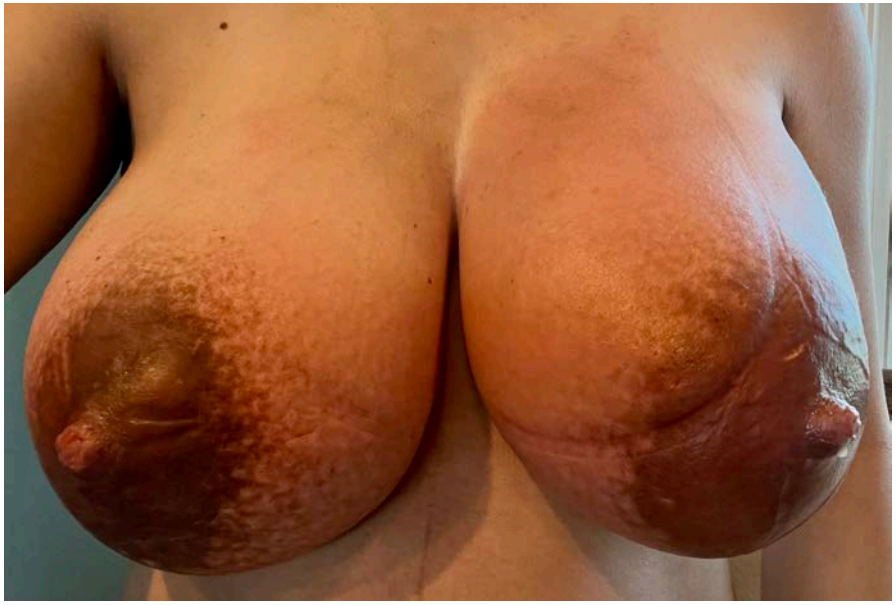
- NO MASSAGE
- Don’t overfeed or overpump
- Downregulate production if needed

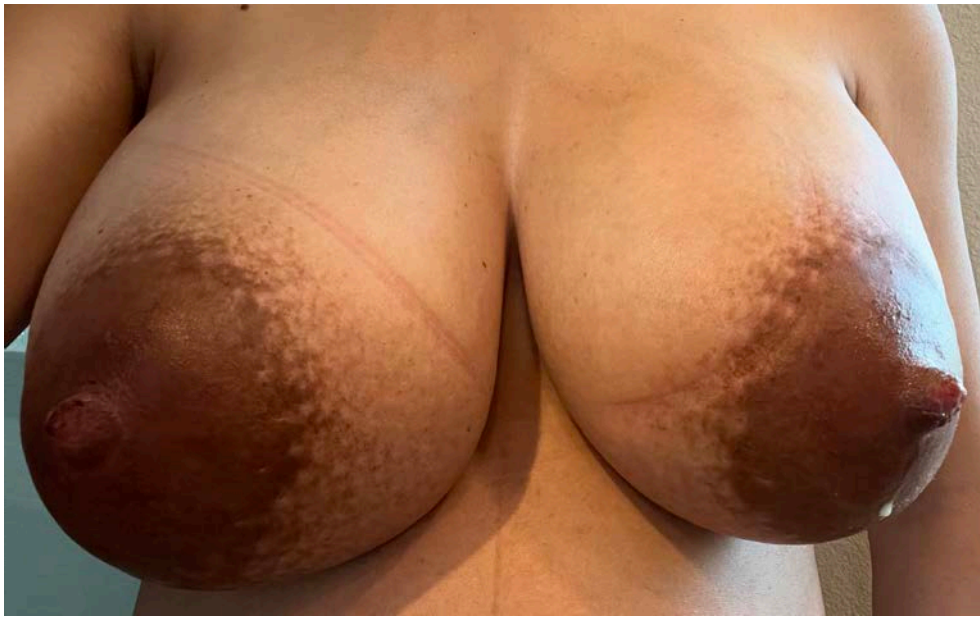
Advil (800 mg every 8 hours x 48 hours)

Ice (10 mins every 30 mins or ad lib)

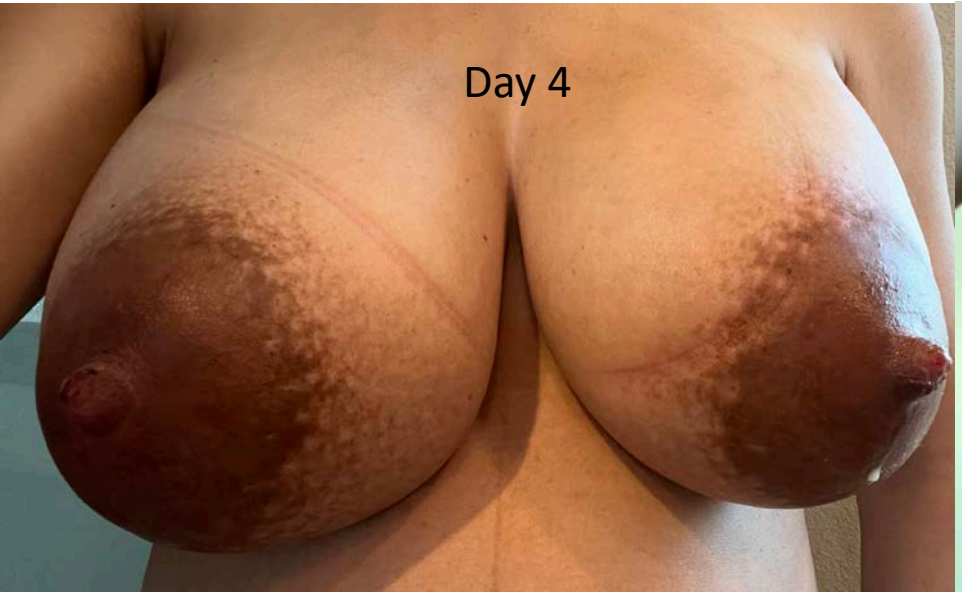
Tylenol (1000 mg every 8 hours x 48 hours)

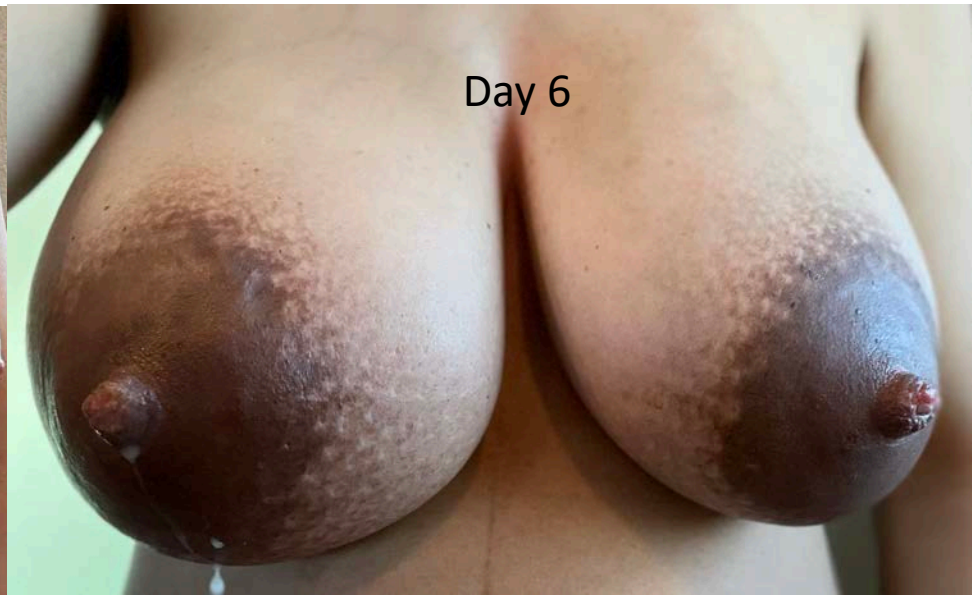
Engorgement Treatment





- Ice, supportive bra, lymphatic drainage
- No benefit of cabbage and other products over ice
- Only feed what baby needs
- PRN advil, Tylenol
- Sudafed, cabergoline for extreme engorgement/hx HTLN


Day 4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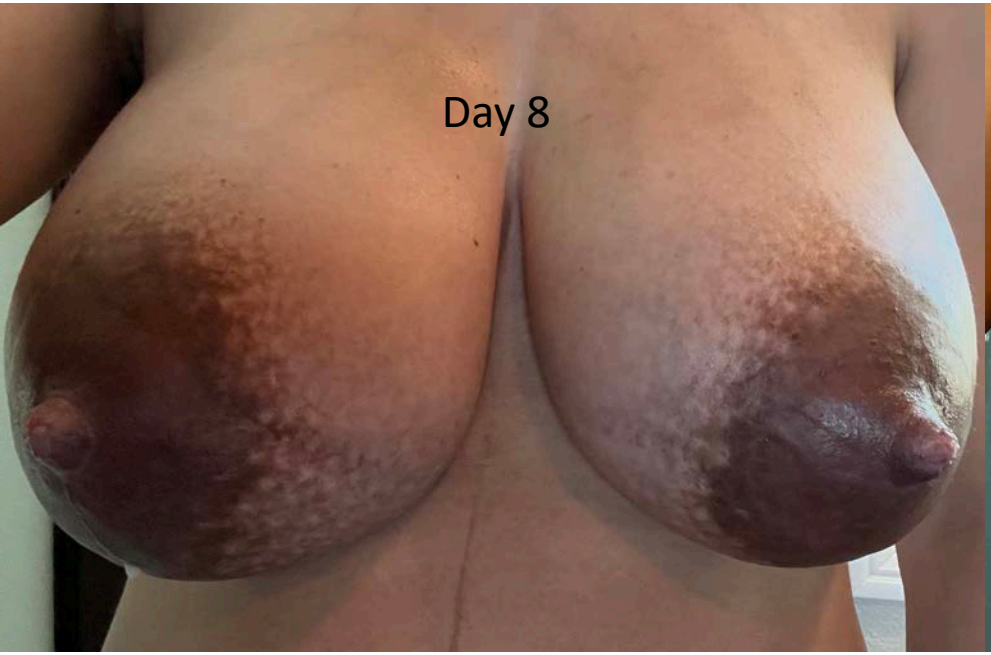
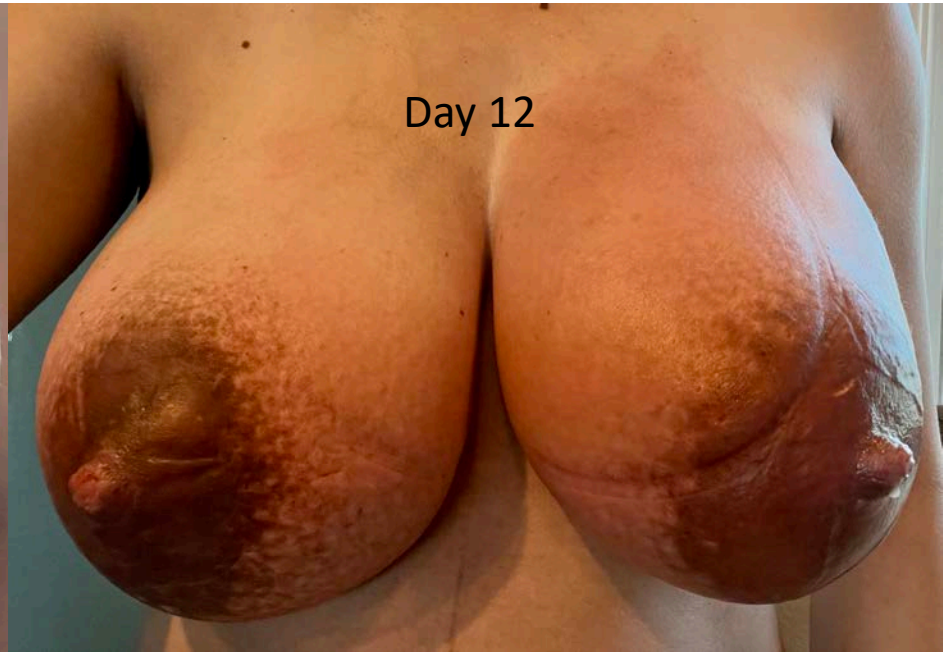
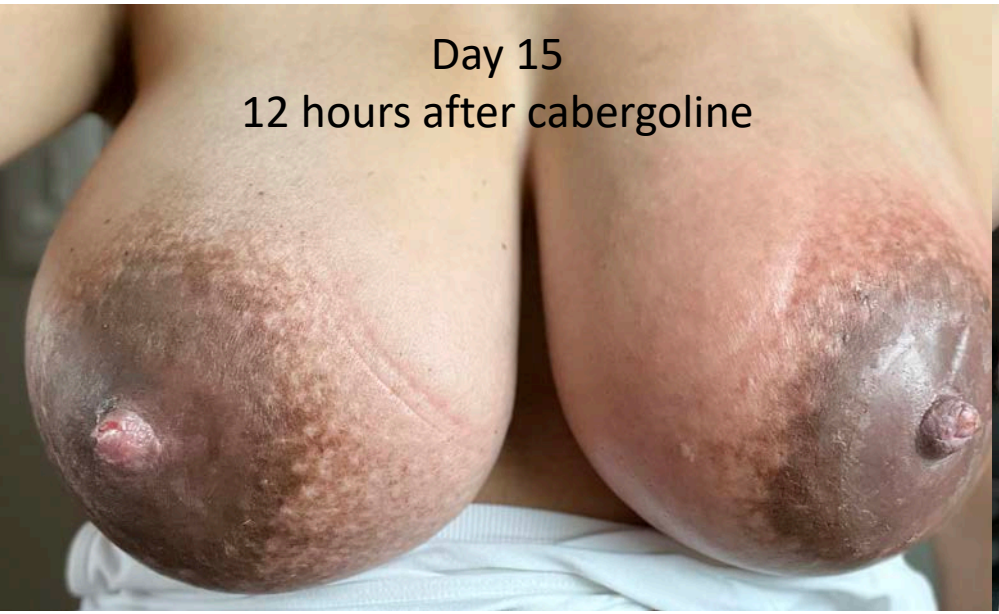
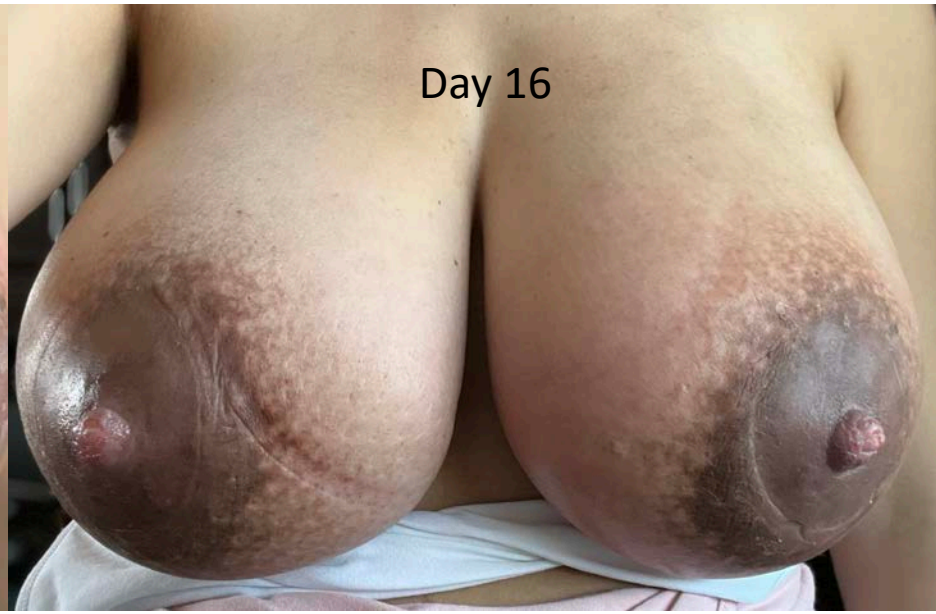

Day 8


Day 12

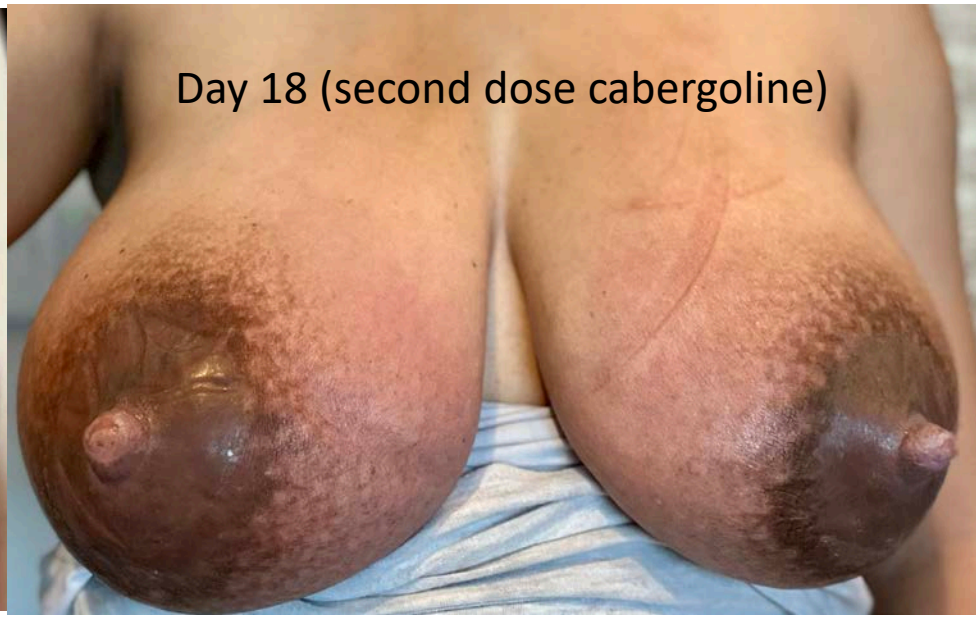
Day 13

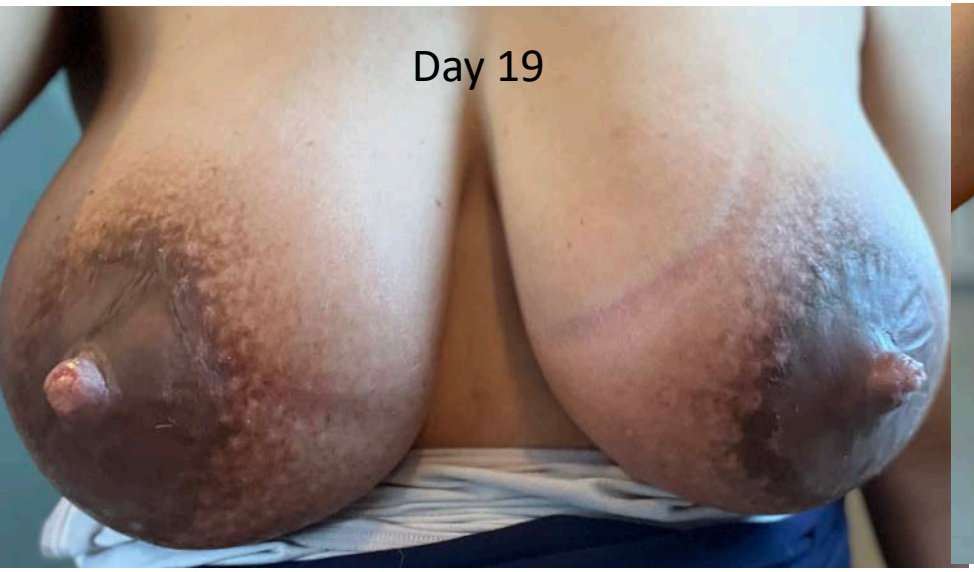
Day 14






Day 17


Day 18 (second dose cabergoline)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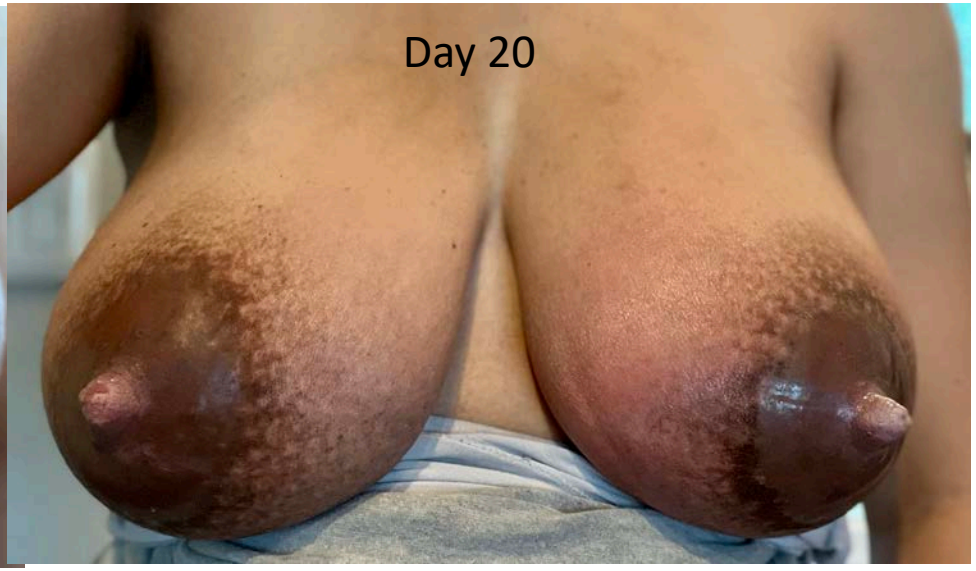
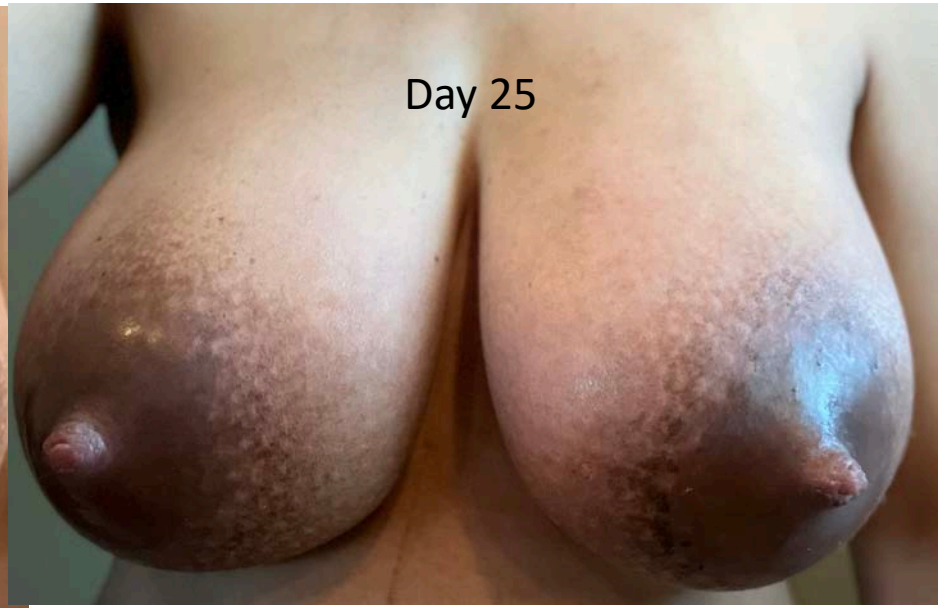

Day 20


Day 22
Started Reglan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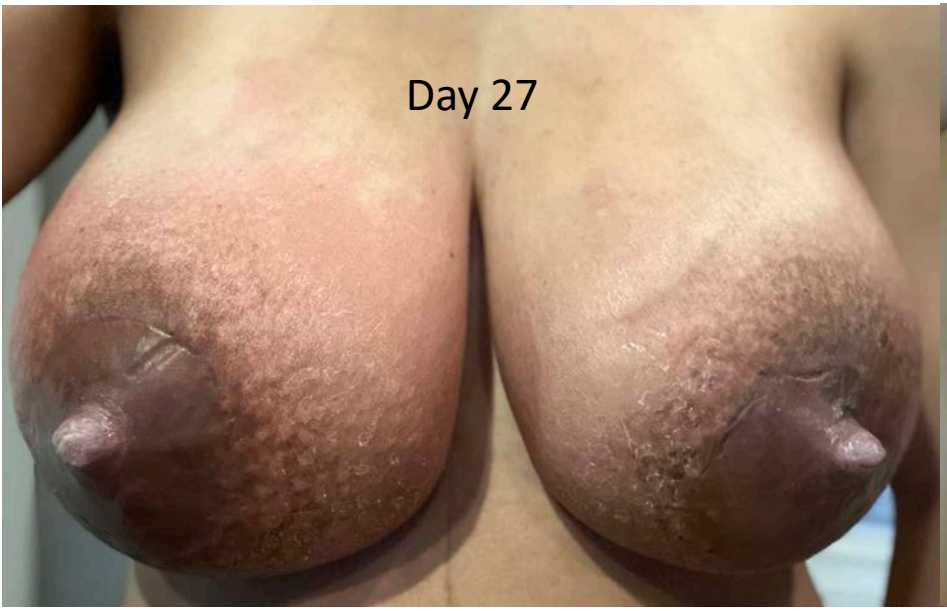
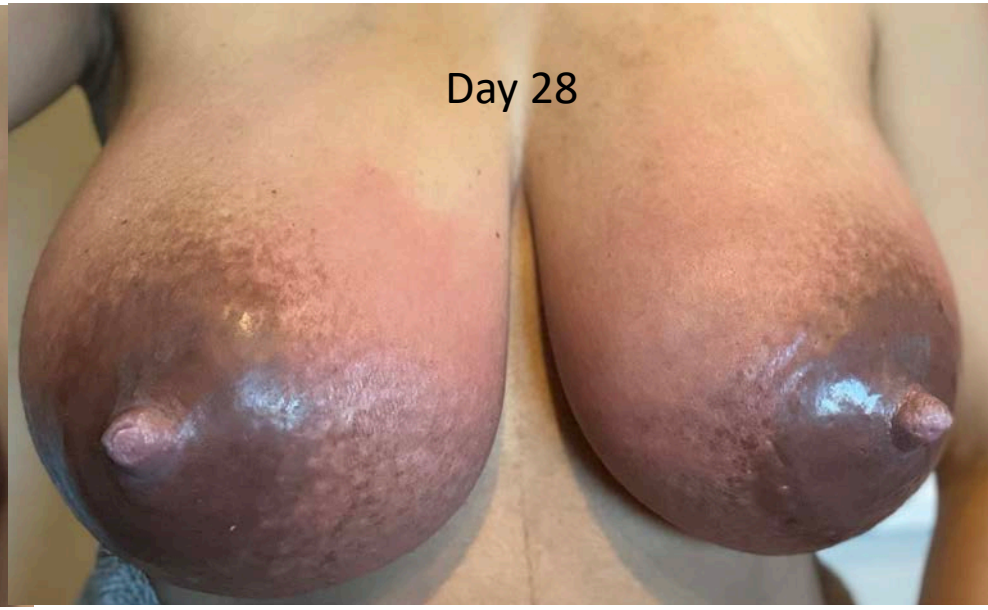
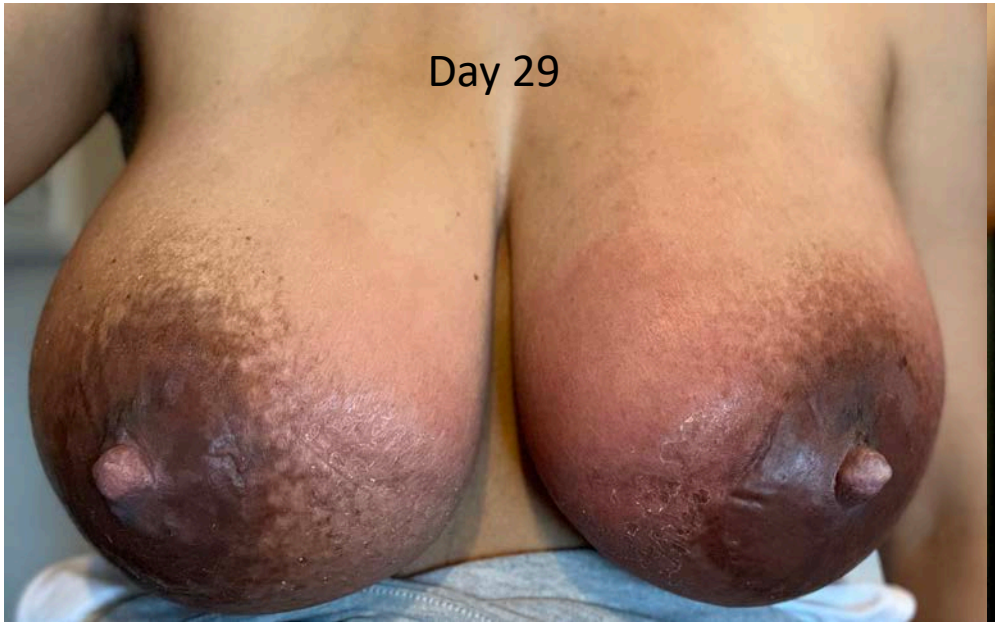
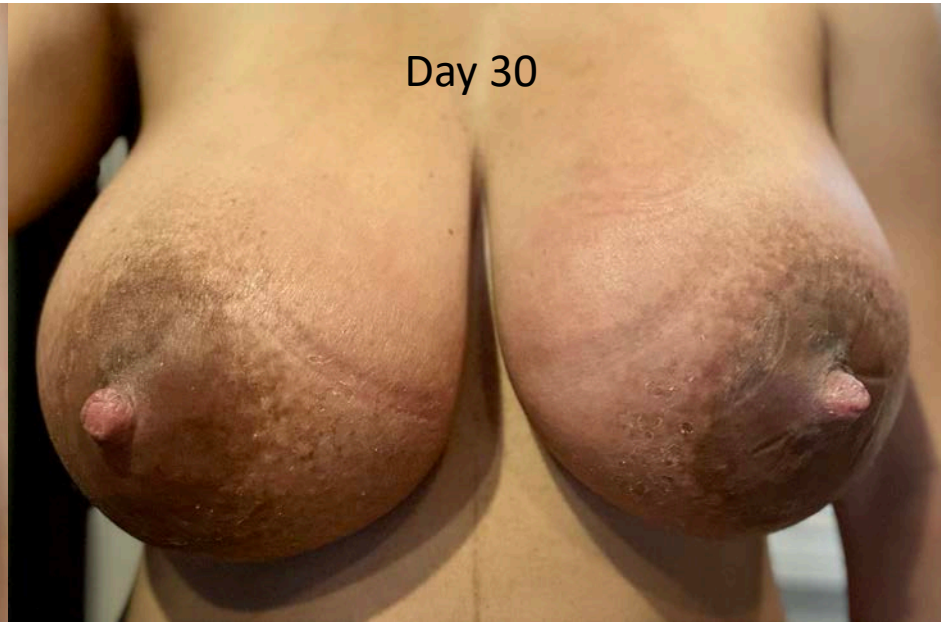
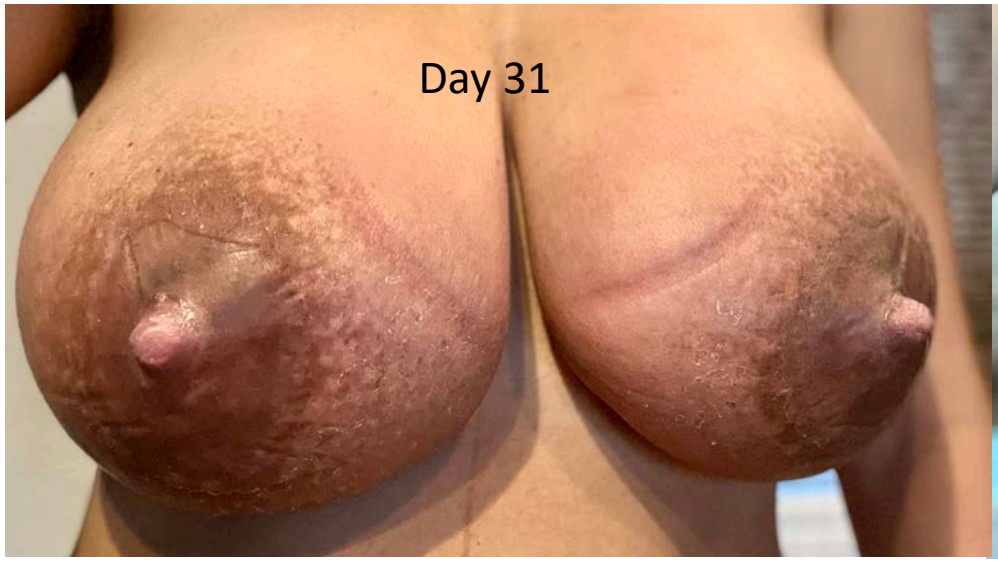
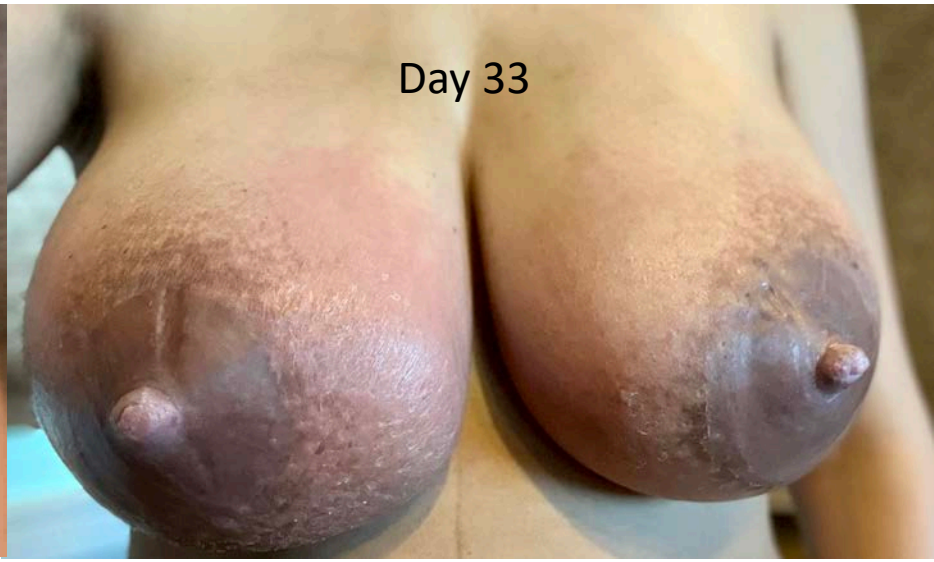

Day 27

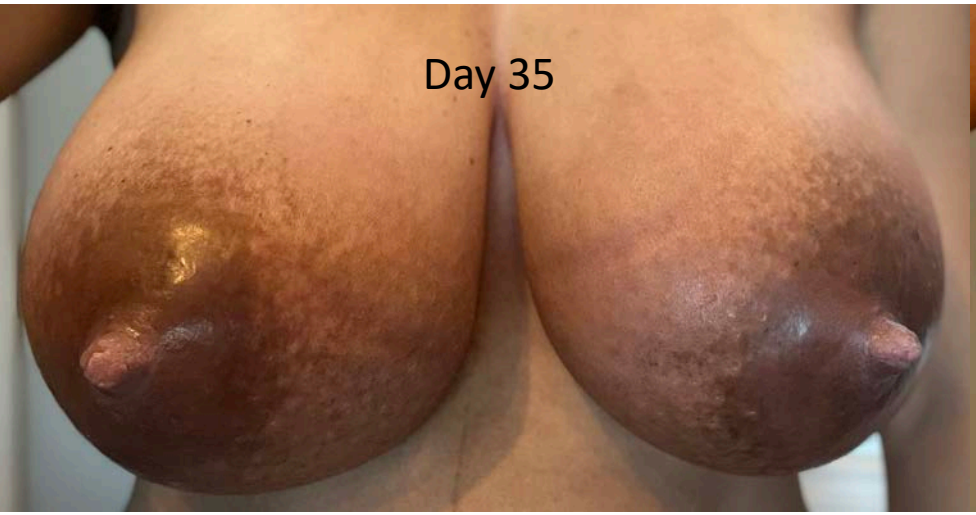

Day 28


Day 29


Day 30


Day 31


Day 33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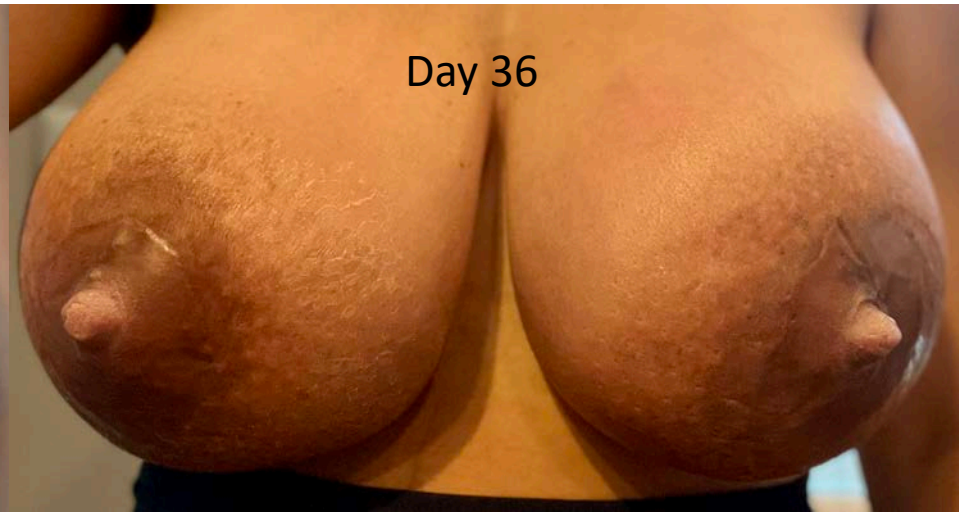
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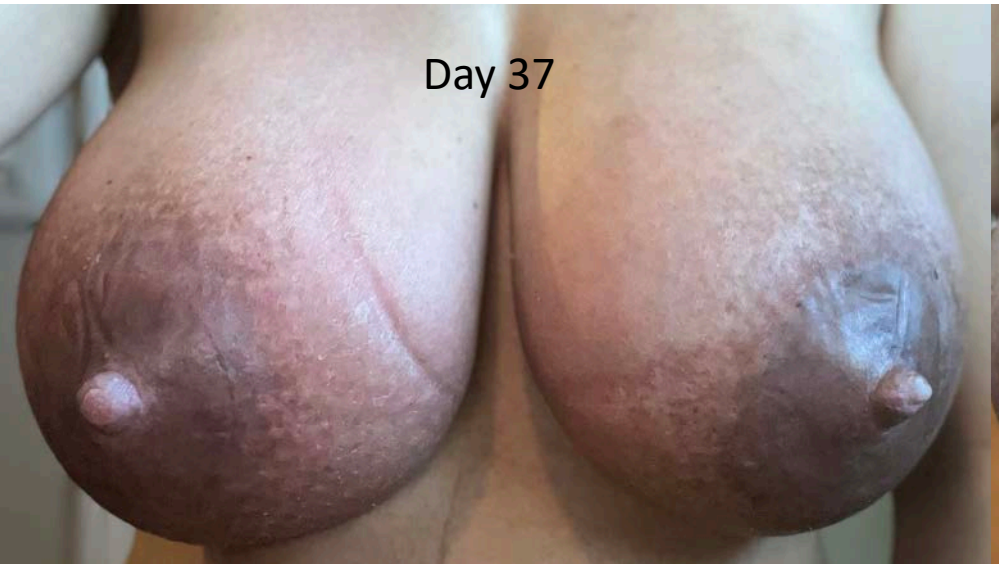
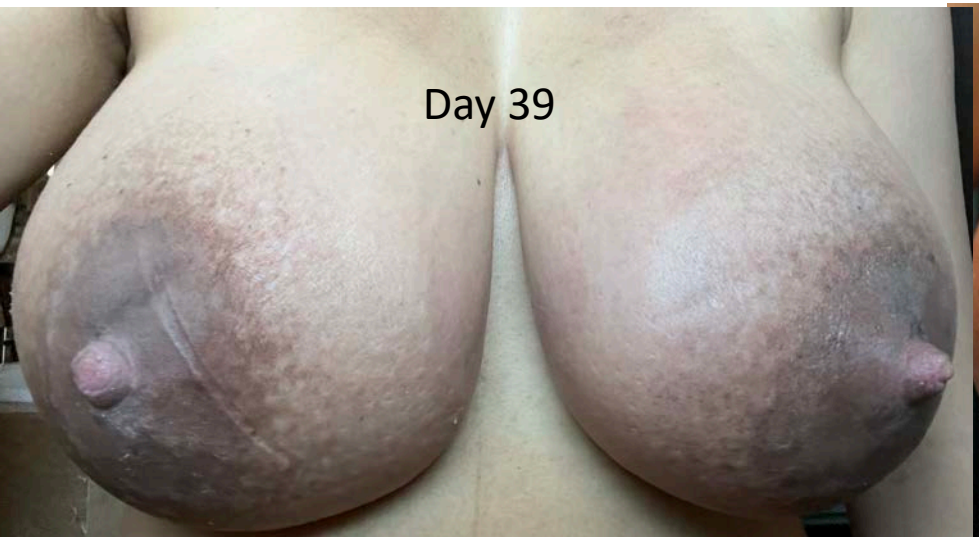

Day 37


Day 38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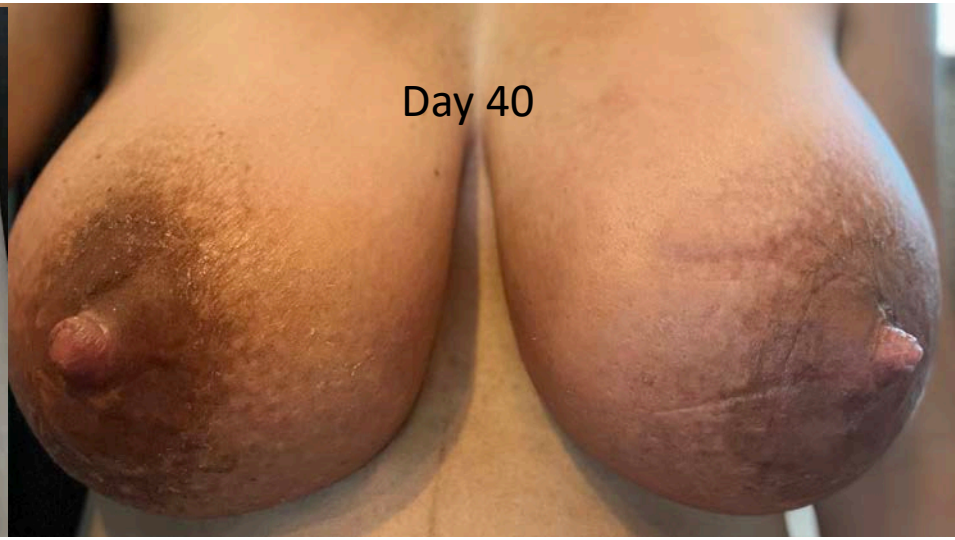
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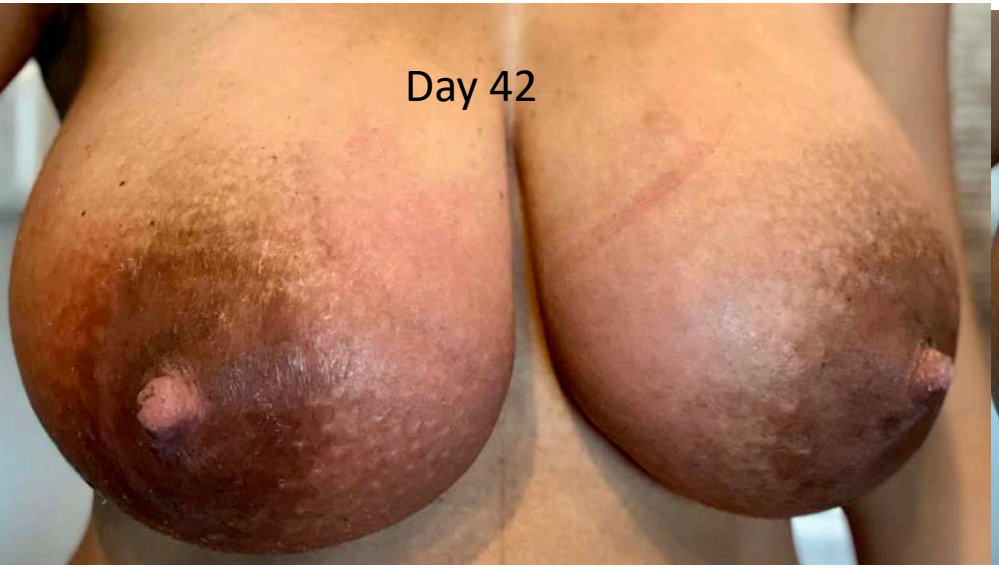
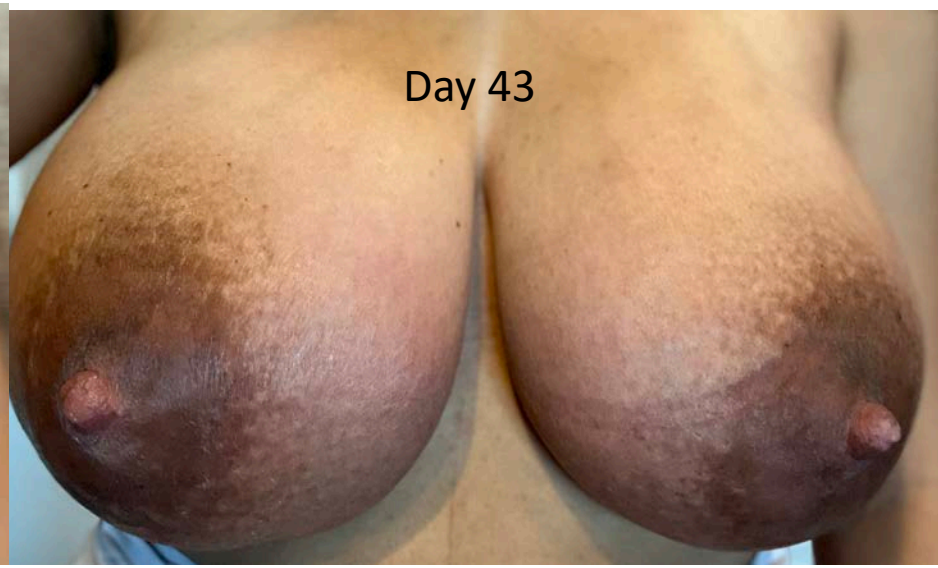
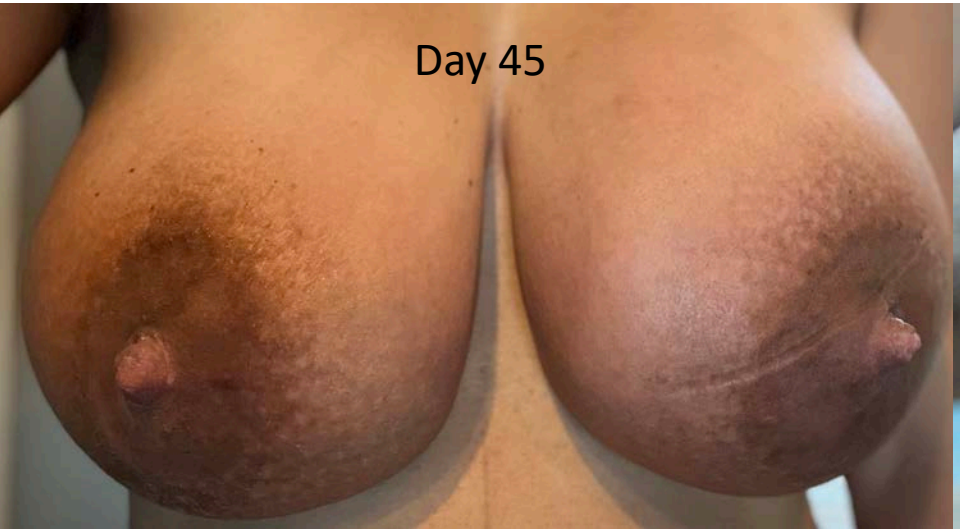

Day 42


Day 43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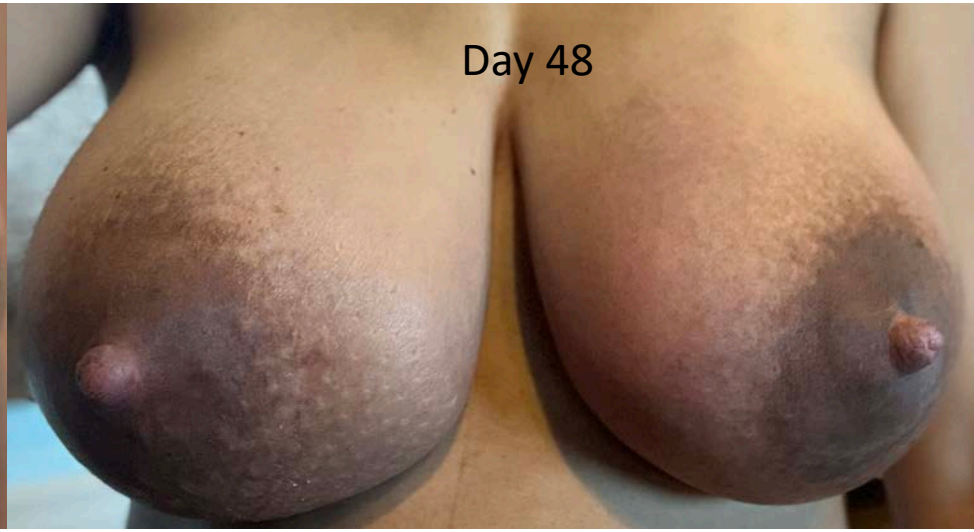
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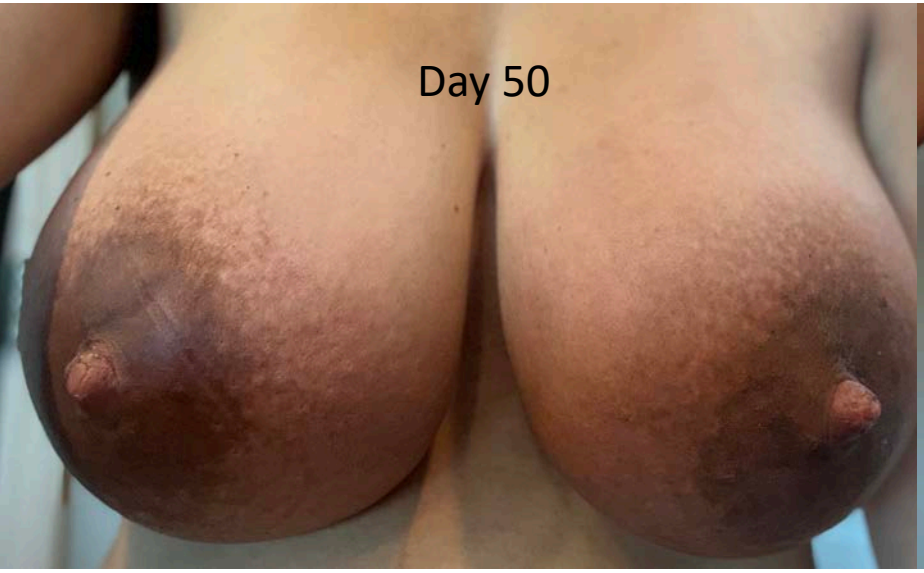
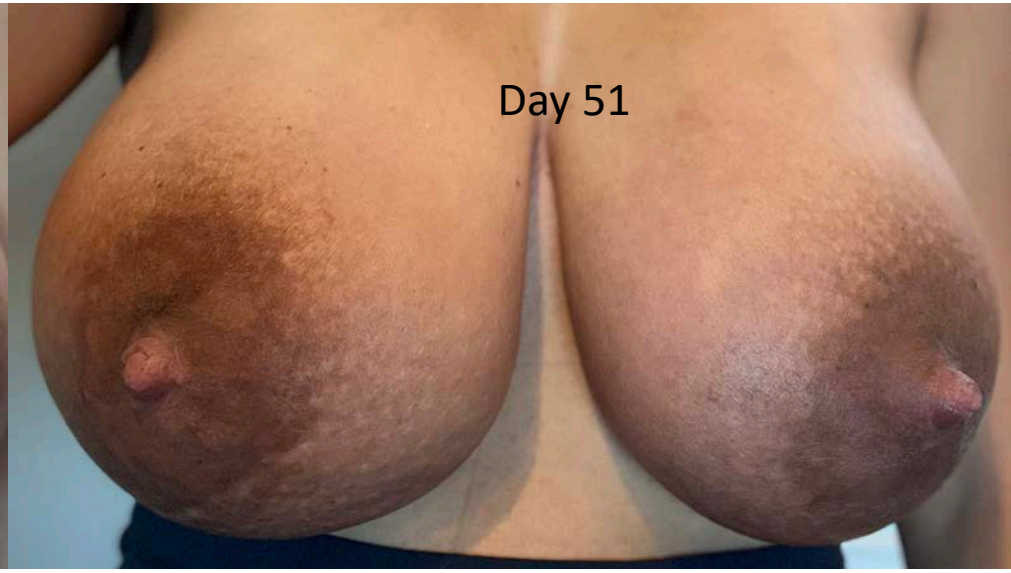
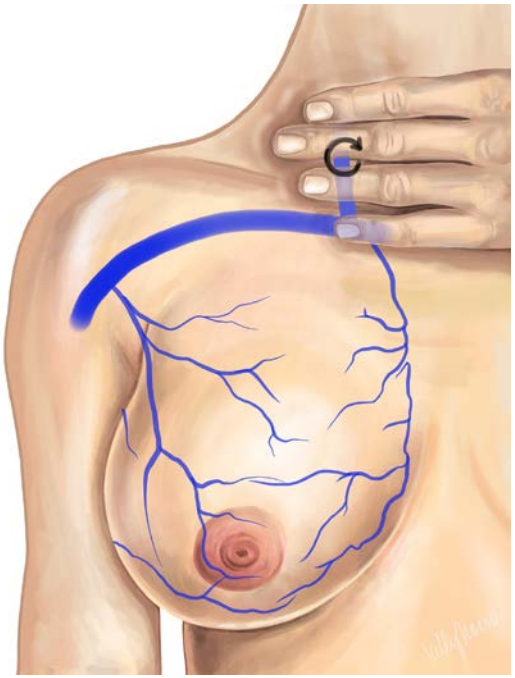
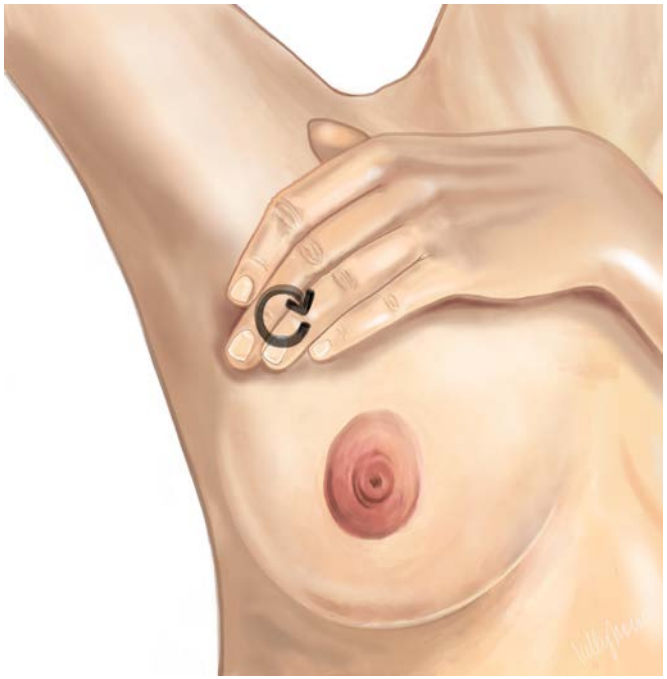
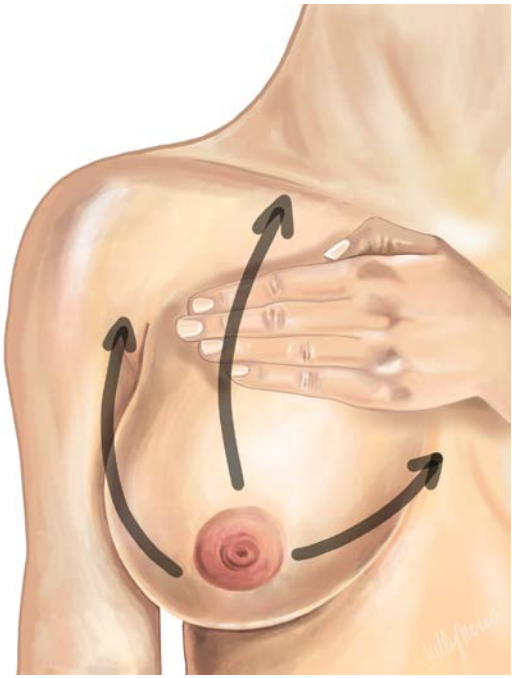

Day 50


Day 51

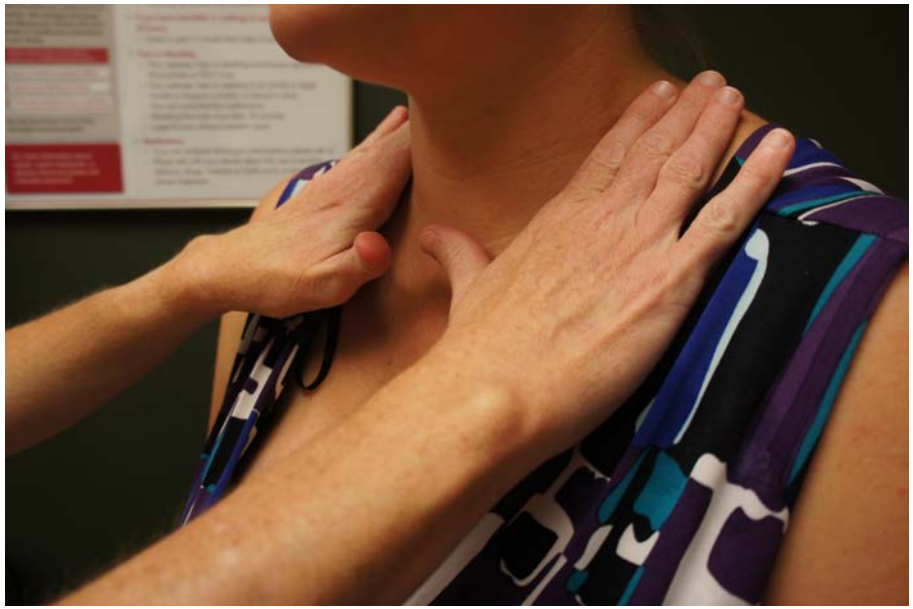
Lymphatic Drainage

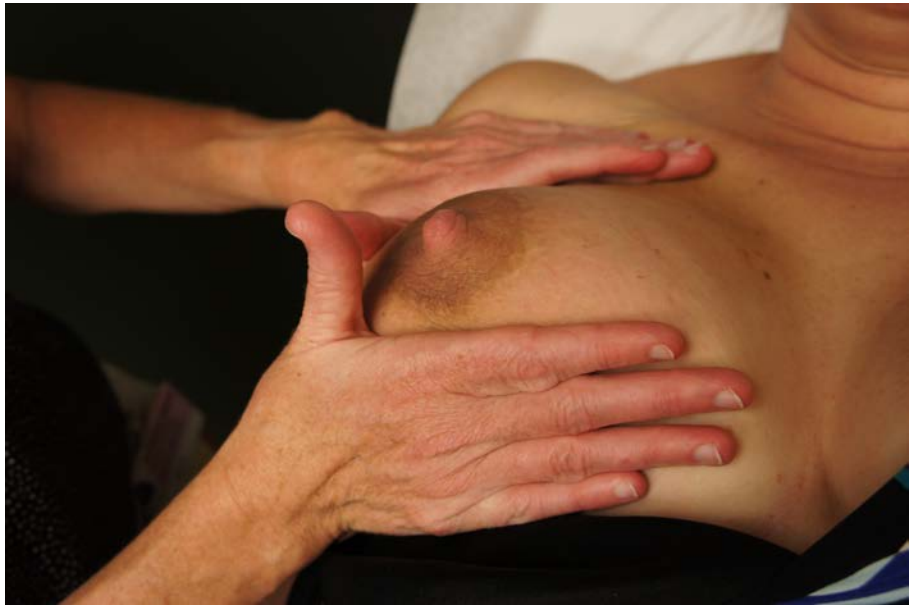


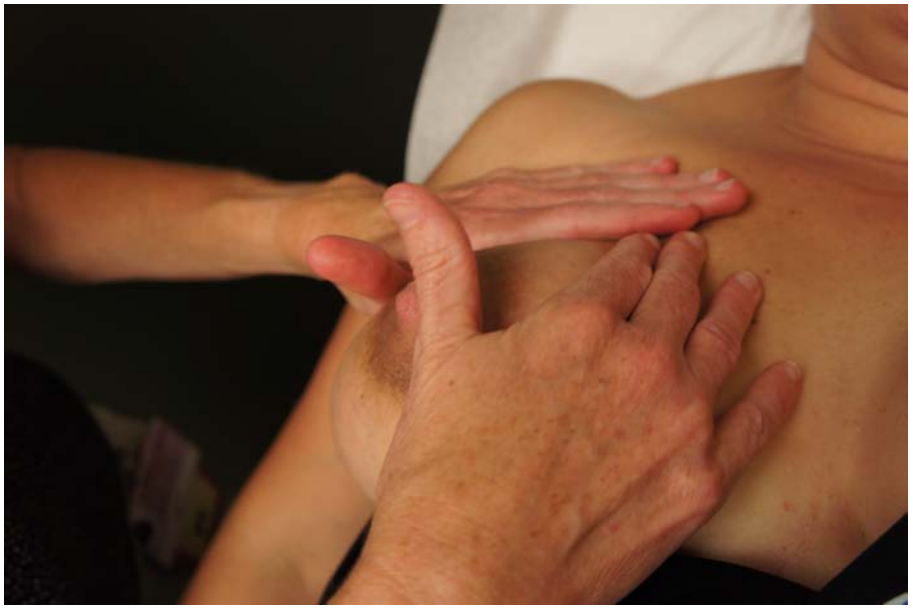


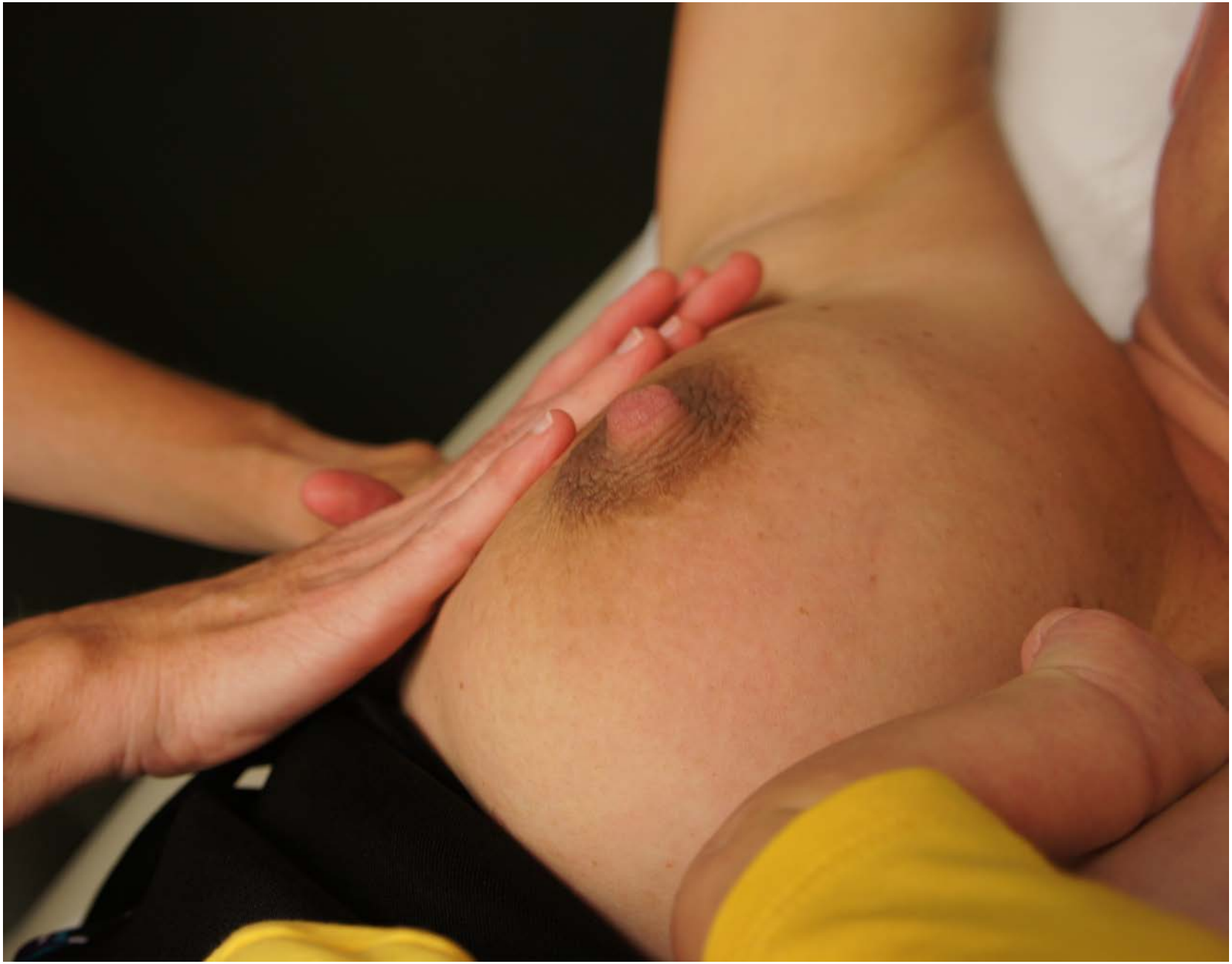


- Reduces swelling by assisting movement of lymph fluid, decreasing edema
- Technique
  - "Very gentle touch/traction of skin - "like petting a cat"
    - The purpose is to lift skin to allow flow of lymphatic drainage and vascular decongestion
  - Ten small circles at junction of internal jugular and subclavian veins
  - Ten small circles in axilla
  - Continue with light touch massage from nipple towards clavicle, axilla
- Start during pregnancy if experiencing painful rapid breast growth, and use as needed postpartum for engorgement



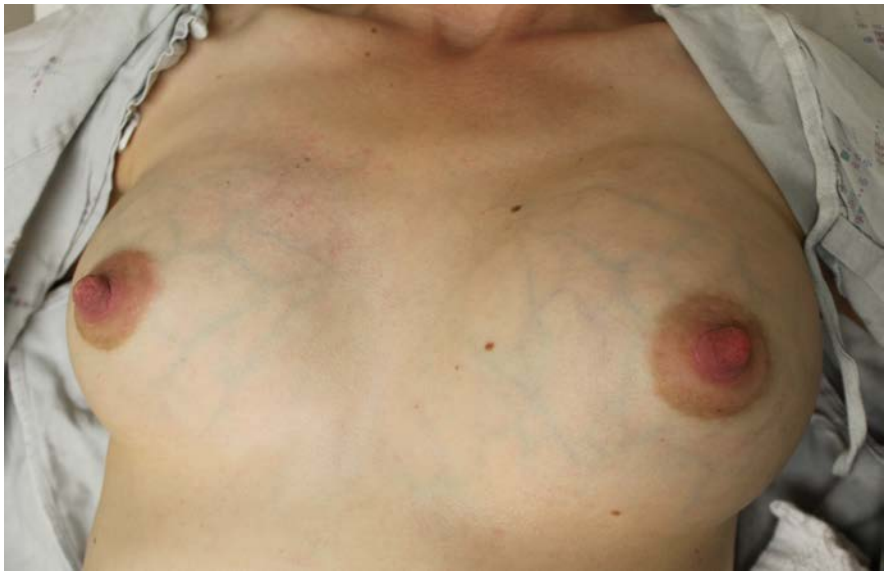






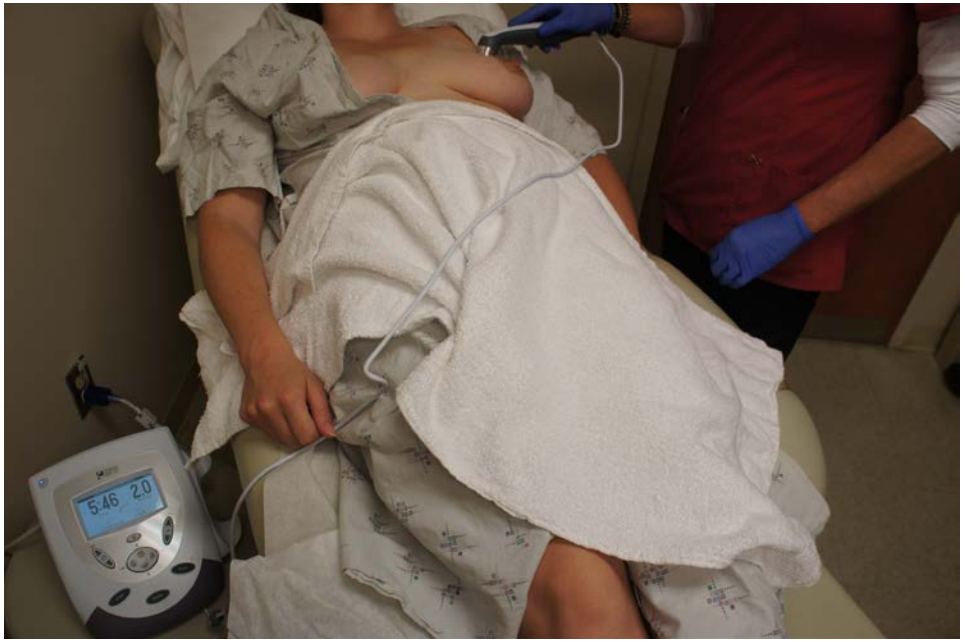
Narrowed Duct Treatment

- Breastfeed physiologically
  - Avoid pump
  - Treat hyperlactation
  - Educate about normal cellular distension
- ICE ICE ICE
  - Advil/Tylenol PRN
- Do NOT OVERFEED ON AFFECTED BREAST
  - Backs up more cars in the traffic jam

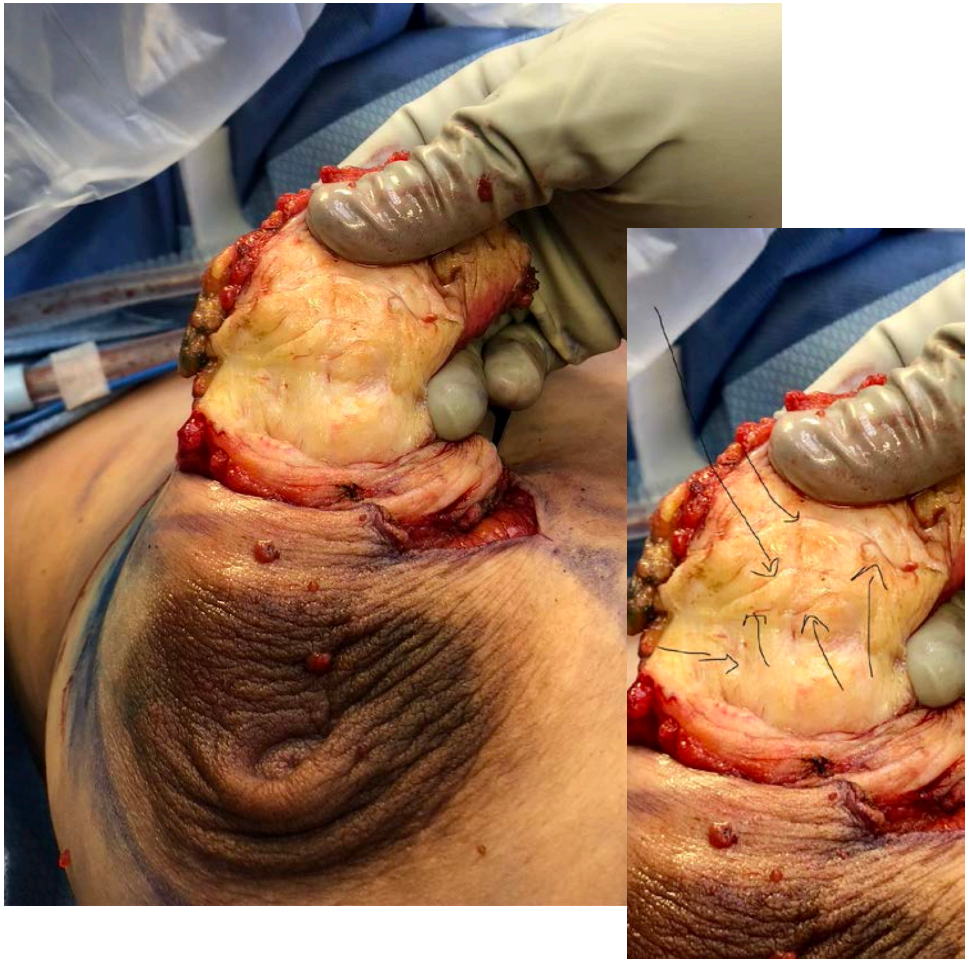


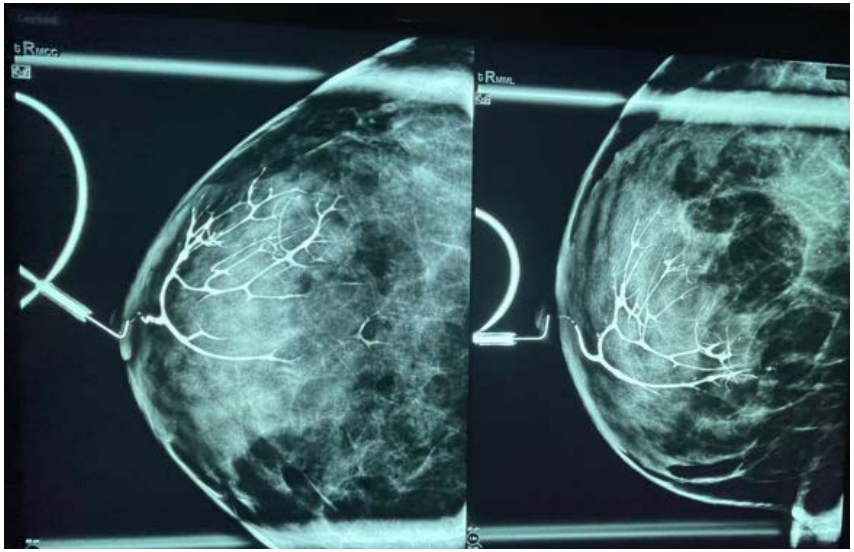
Narrowed Duct Treatment

- Therapeutic ultrasound
  - Thermal and nonthermal effects, including acceleration of metabolic rate, reduction of pain, increased circulation
- Method
  - Frequency 1mHz, intensity 2.0 W/cm2
  - 5-6.5 mins for area 2-3x the head of the probe



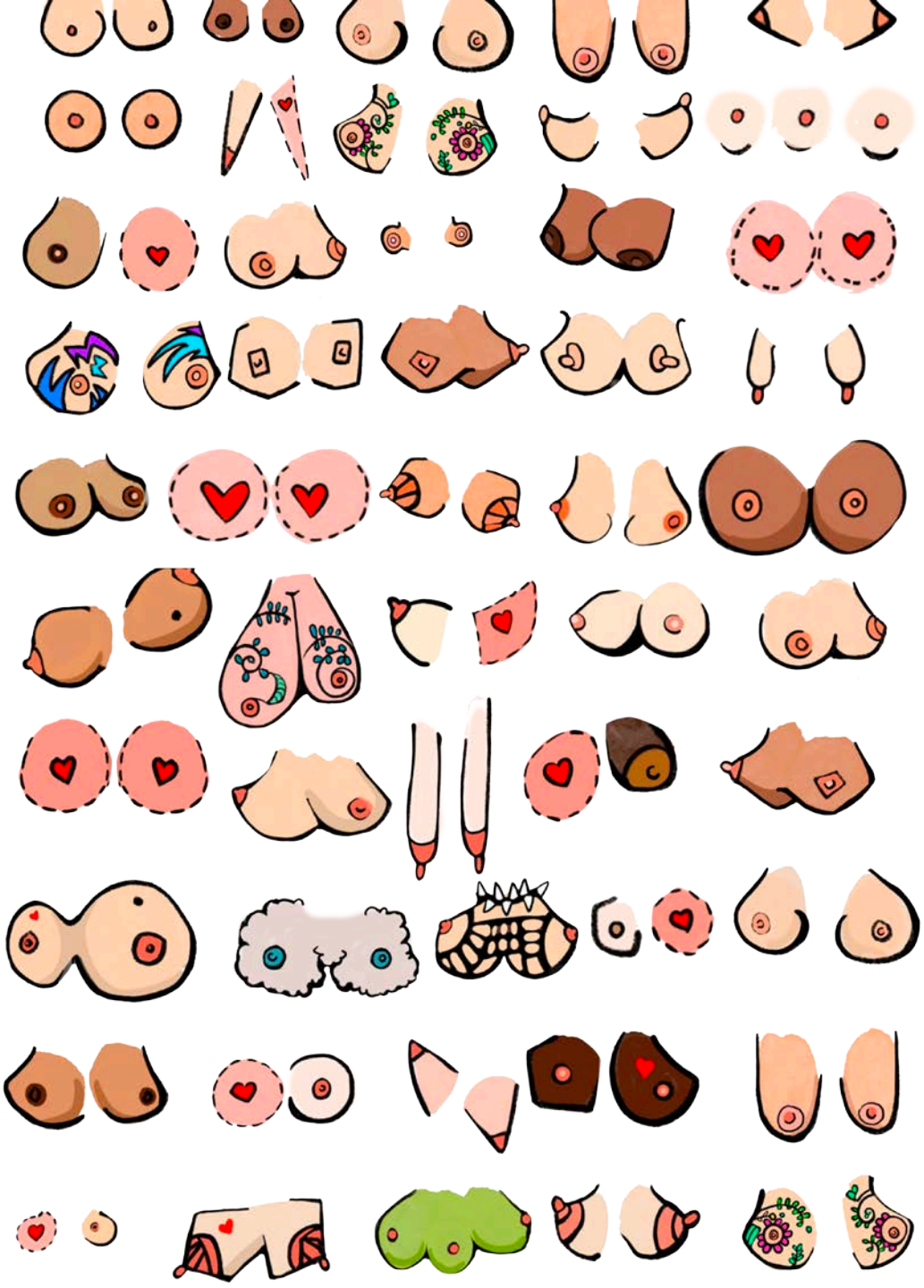
NO MASSAGE





“Massage” Versus Hand Expression

- Gentle compressions when nursing, hand expressing, or pumping is safe, but this is milk expression, not someone “massaging out a plug”




Massage = 9.0 Magnitude Earthquake

Narrowed Duct Treatment

- Sunflower lecithin prevention 5 g/daily, 10 g/daily acute
- Image with breast ultrasound if it doesn't resolve
  - Rule out fluid collection or mass

Mastitis Treatment

- EXAMINE THE PATIENT
  - Very often can wait 24 hours to start antibiotics and resolve conservatively
- Address predisposing factors
  - Hyperlactation, pump use
- Physiologic nursing
  - Do not pump to empty or overfeed on affected breast
- ICE ICE ICE
  - Advil/tylenol
- NO MASSAGE
- Probiotics
  - Still need more data
- Antibiotics if true infection/cellulitis
- Address mental health

Image: Mothersun and the Captain

EDUCATE ABOUT GLANDULAR TISSUE BEING NORMAL!

- Patients with both high AND low milk production levels may report “plugs”
- This is most often normal gland that is starting to become more prominent as their milk production increases
  - ”Islands of gland”
- Lower production patients can also experience disruptions of microbiome/early inflammatory mastitis
- However, the treatment for this is NOT massage and “pumping to prevent milk stasis”

Early Mastitis RX

Streaking, pain

- Ice
- Heat
- Ibuprofen
- Acetaminophen
- **NO MASSAGE**
- Therapeutic ultrasound

48 hours later

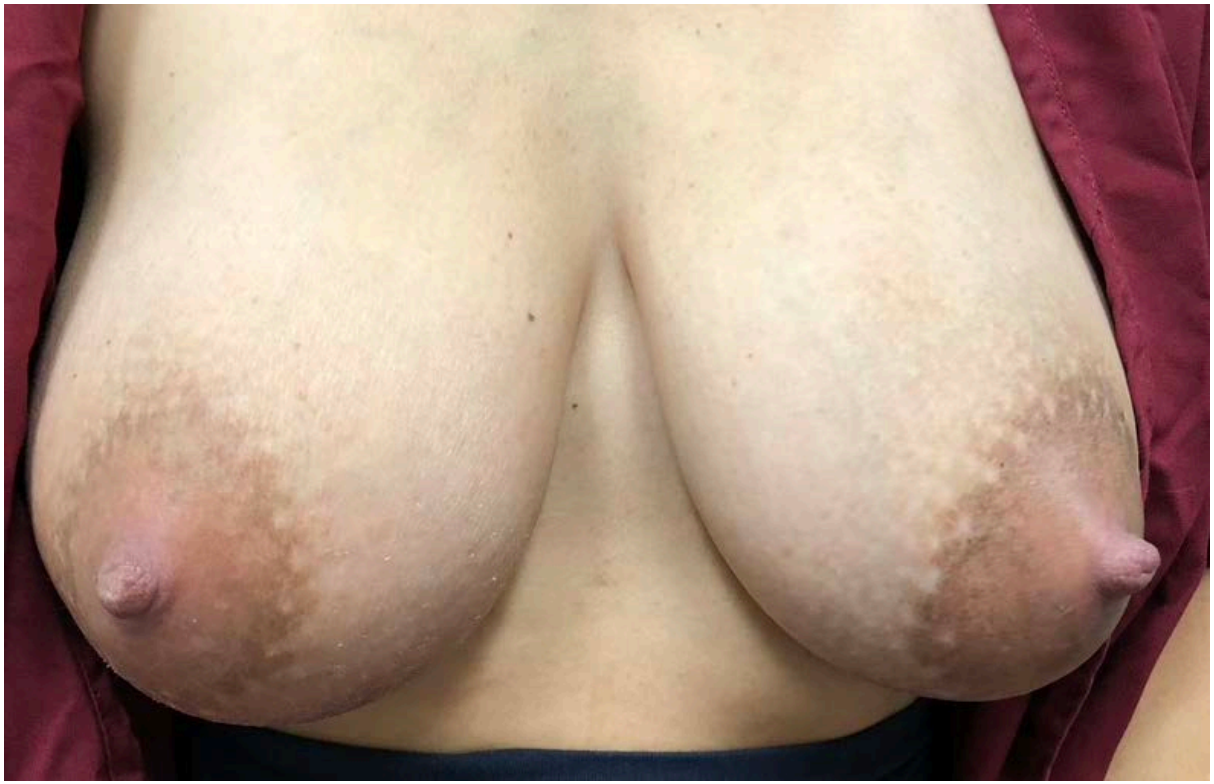
48 hours later

Abscess from massaging device early postpartum

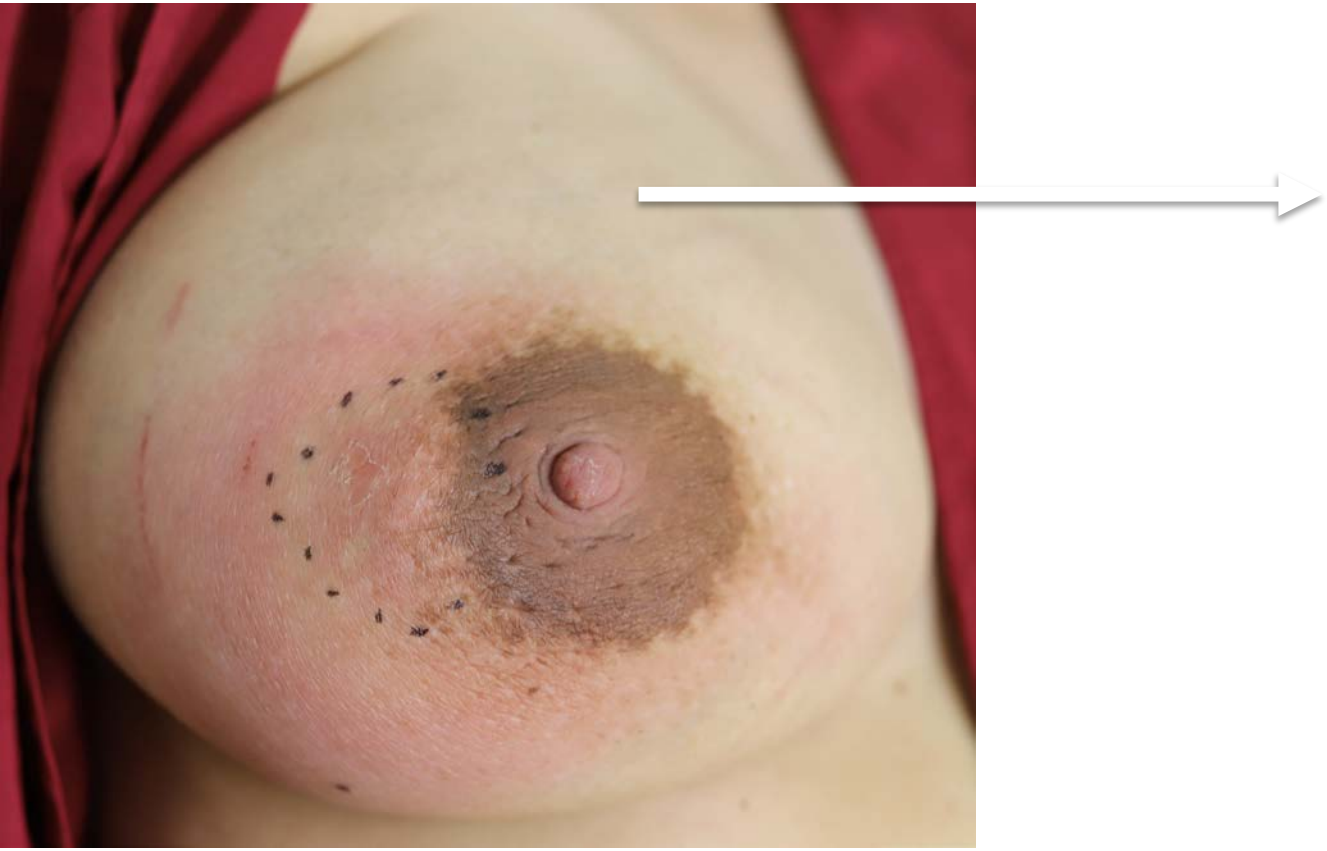
6 Months Later: Early Mastitis

- Resolved within 24 hours of no massage, ice, ultrasound, advil/tylenol

Resolution:
Stopped pumping
Fed left breast to right breast in 4:1 ratio

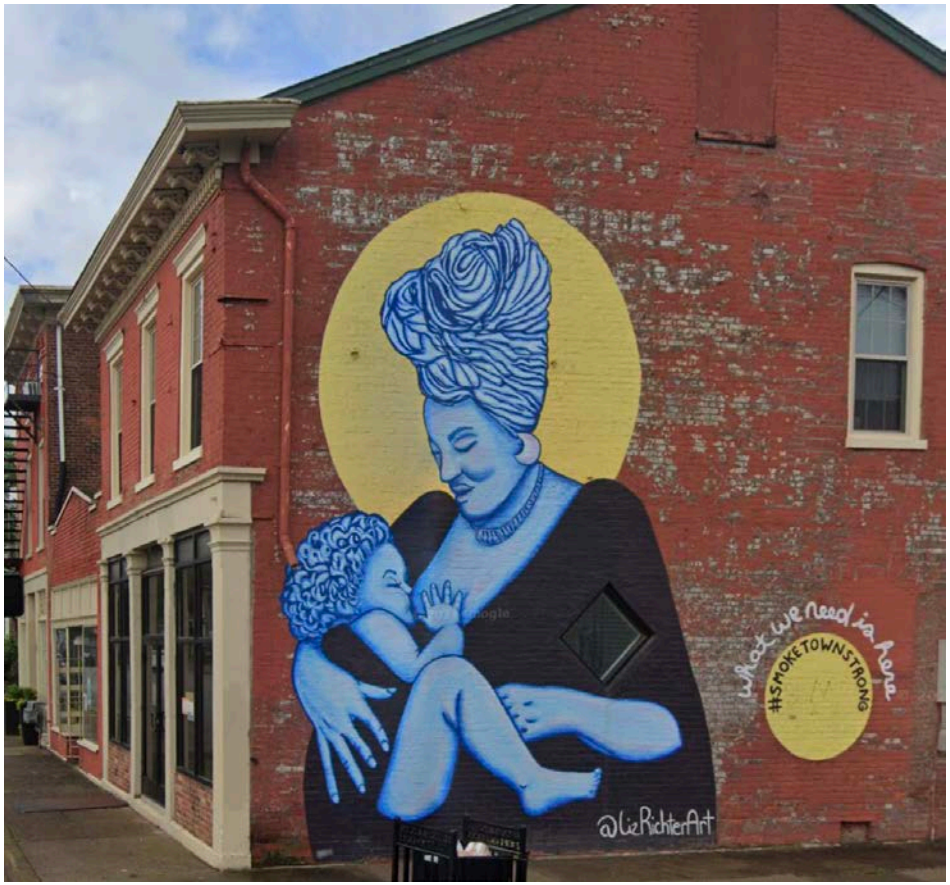


Resolution:
Abscess drained, stopped pumping, stopped massaging, stopped overfeeding



Recurrent Mastitis

- Predisposing factors
- Breastmilk culture
- Empiric change of antibiotics
- Sunflower lecithin
- Consider imaging



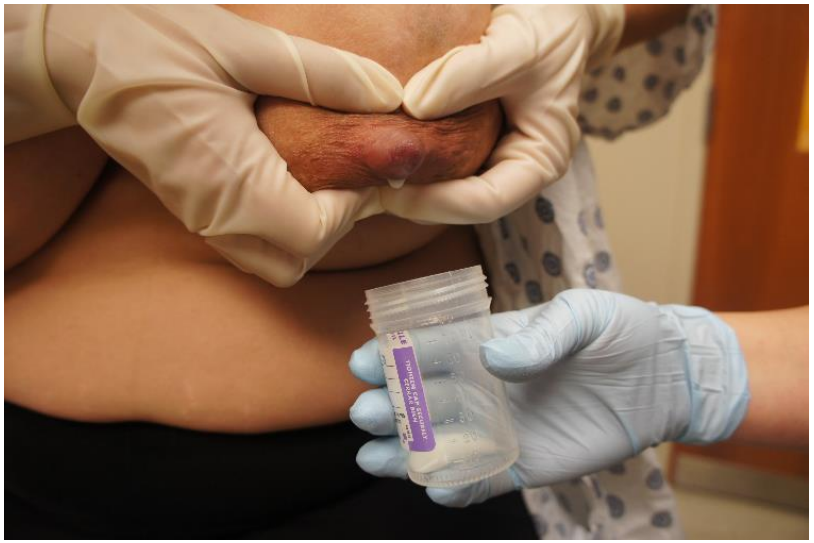
Recurrent Mastitis

- EXAMINE THE PATIENT
  - Night sweats, “fever” common from hormonal shifts
  - Racing heart can be present in panic attacks
  - Erythema most often inflammation and not infection

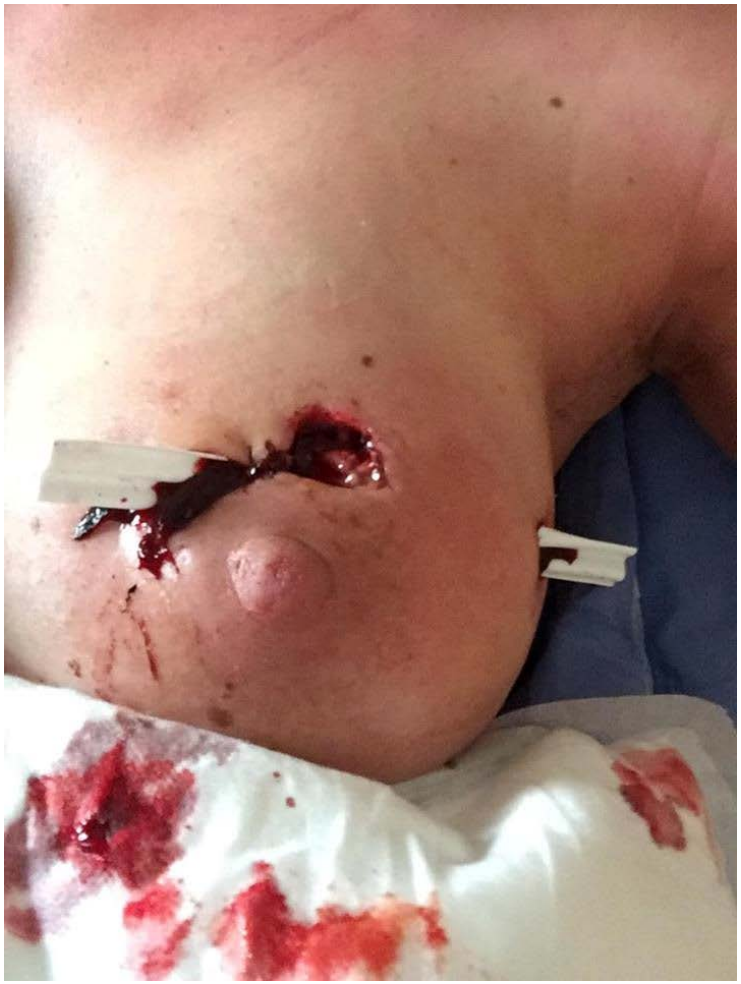
Image: Chloe Trayhurn.

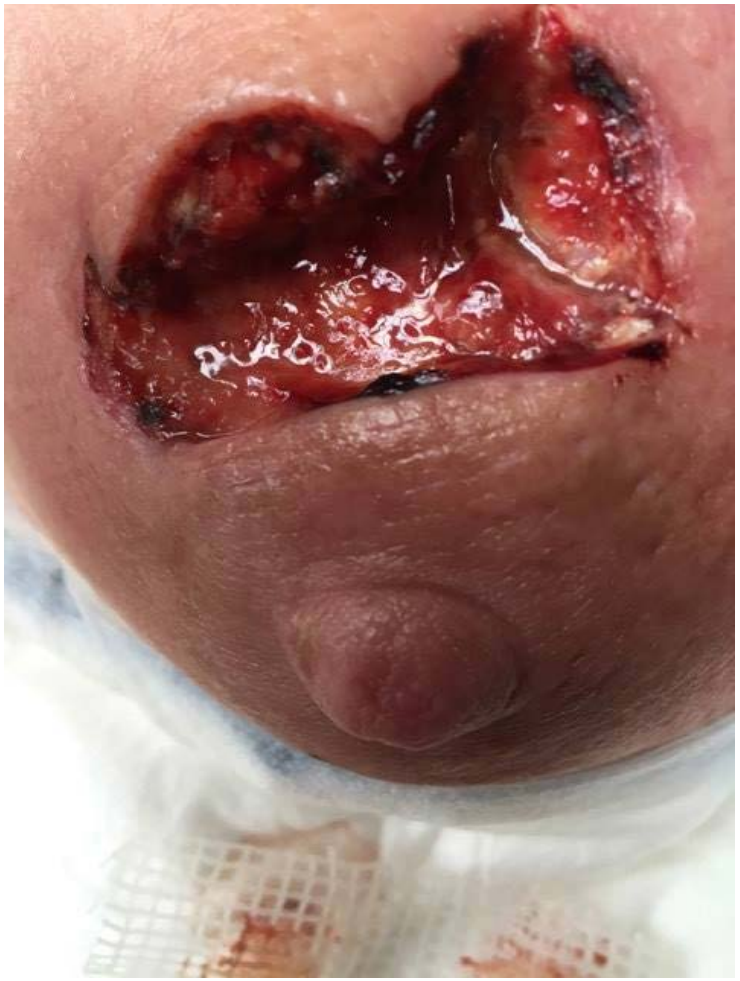
Breastmilk Culture

- Prep NAC
- Use sterile gloves
- Hand express into sterile container
- Do not touch nipple or areola to culture container
- Send as body fluid culture

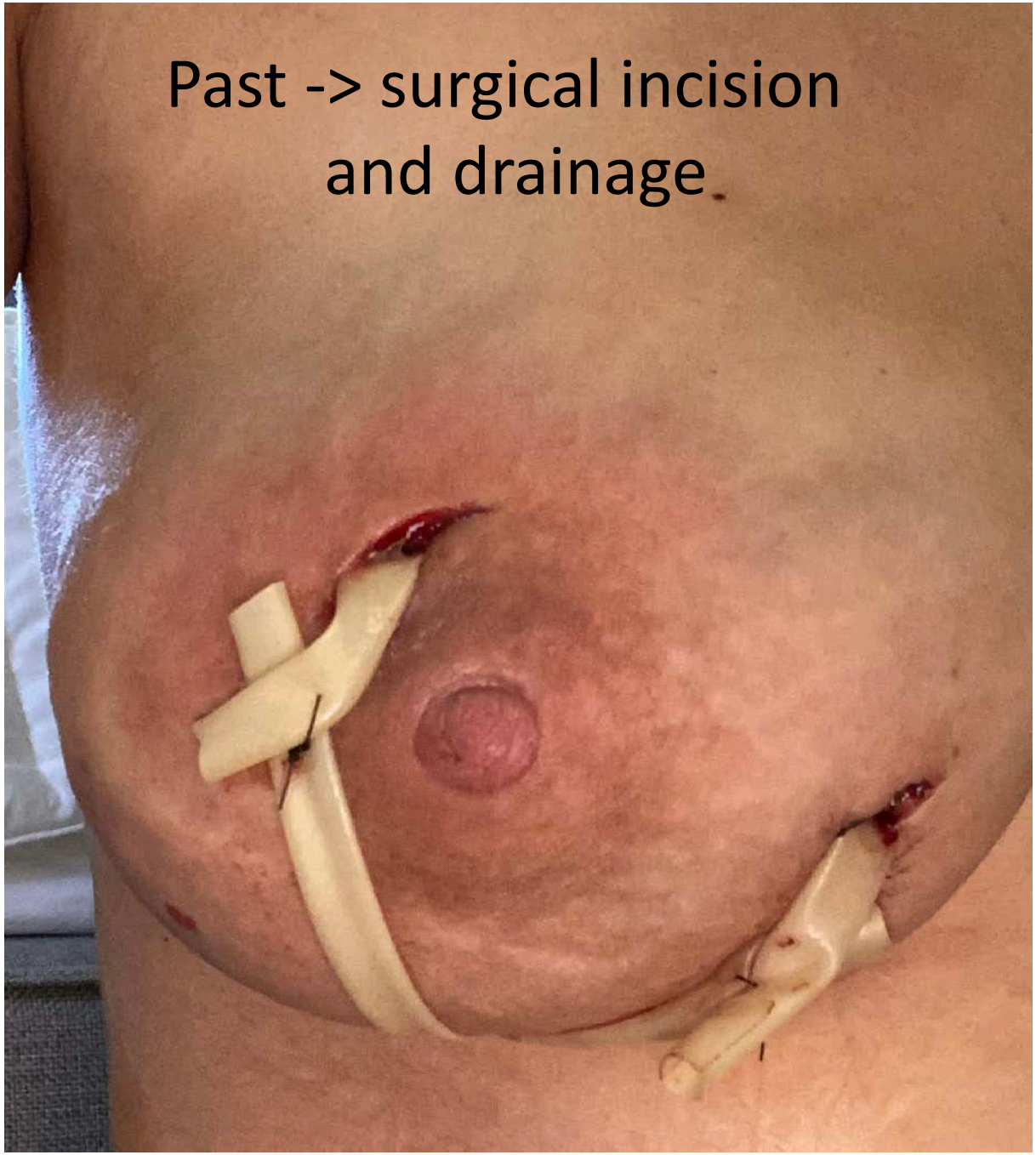


Abscess treatment:
Past -> surgical incision and drainage



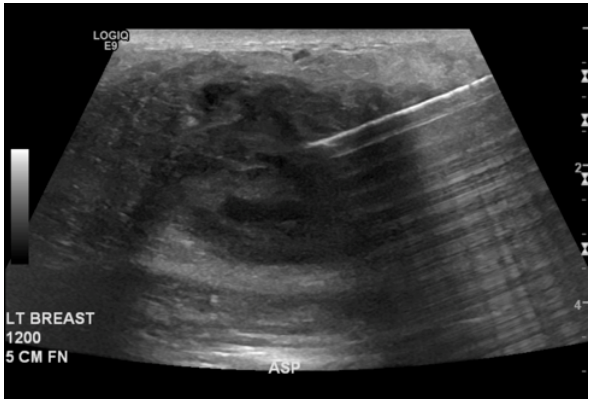


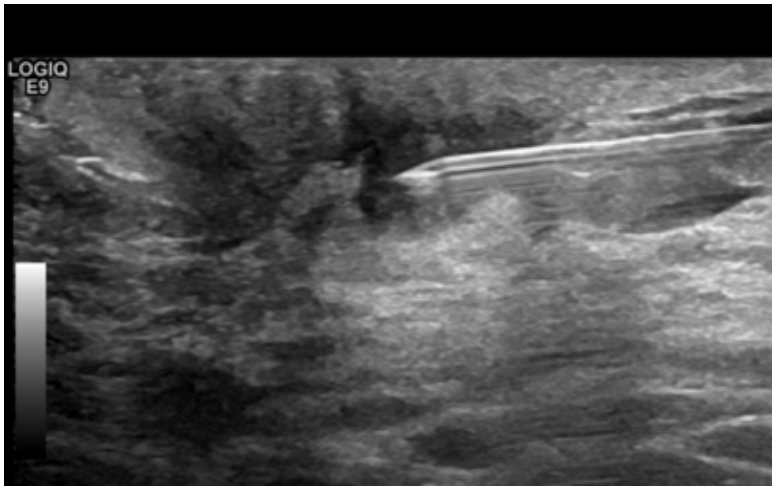
Images: Laura Tauritz Bakker


Past -> surgical incision
and drainage

Abscess Treatment: Present

- Drainage, culture, antibiotics
- Aspiration generally taught to surgeons/radiologists
  - However, extremely difficult to obtain definitive drainage due to sticky milk and often recurs

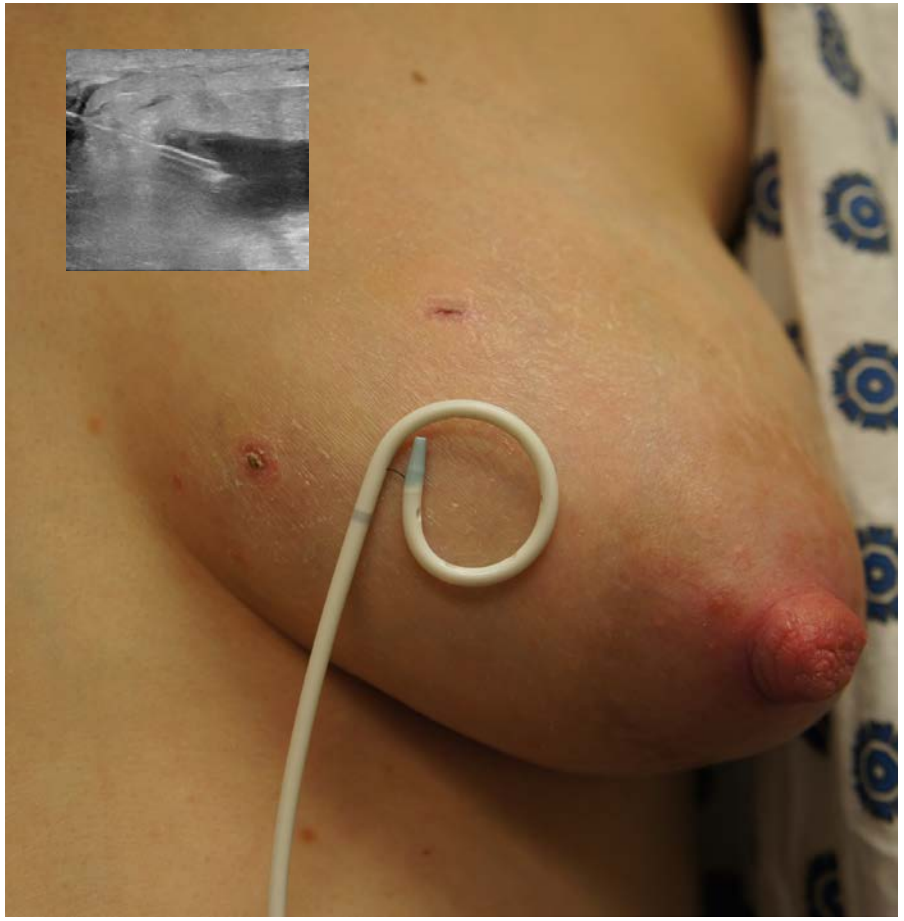




Eryilmaz et al The Breast 2005, Giess et al J Clin Ultrasound 2014 , Christiansen et al Br J Rad 2005

Abscess Treatment: Present

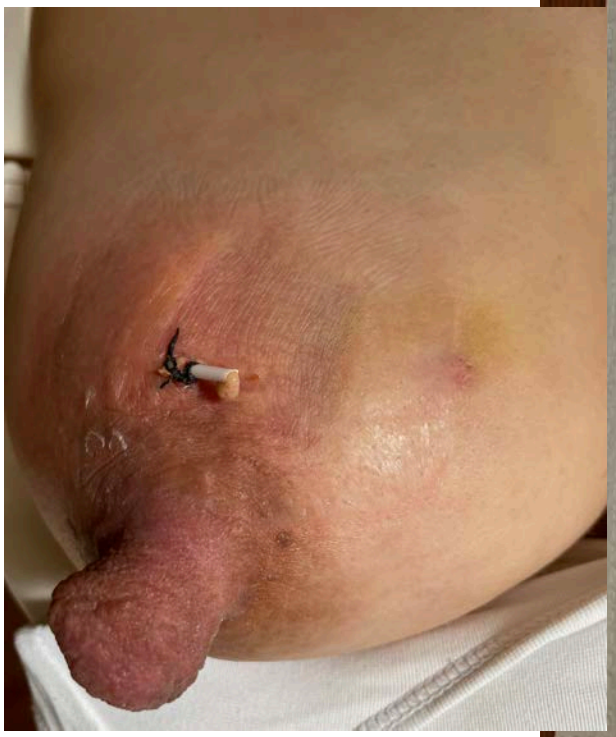
- Interventional radiology (IR) w/ 8F catheter
- 11 blade stab incision/penrose wick placement in clinic



Eryilmaz et al The Breast 2005, Giess et al J Clin Ultrasound 2014 , Christiansen et al Br J Rad 2005

Drain to gravity, NOT suction
(Passive decompression/wicking)

NO VAC!!!

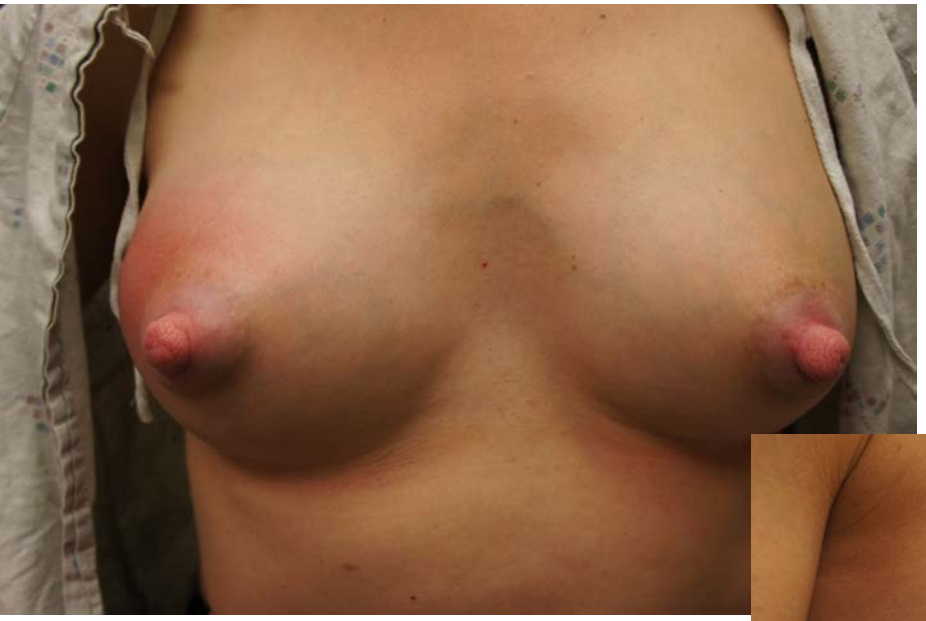


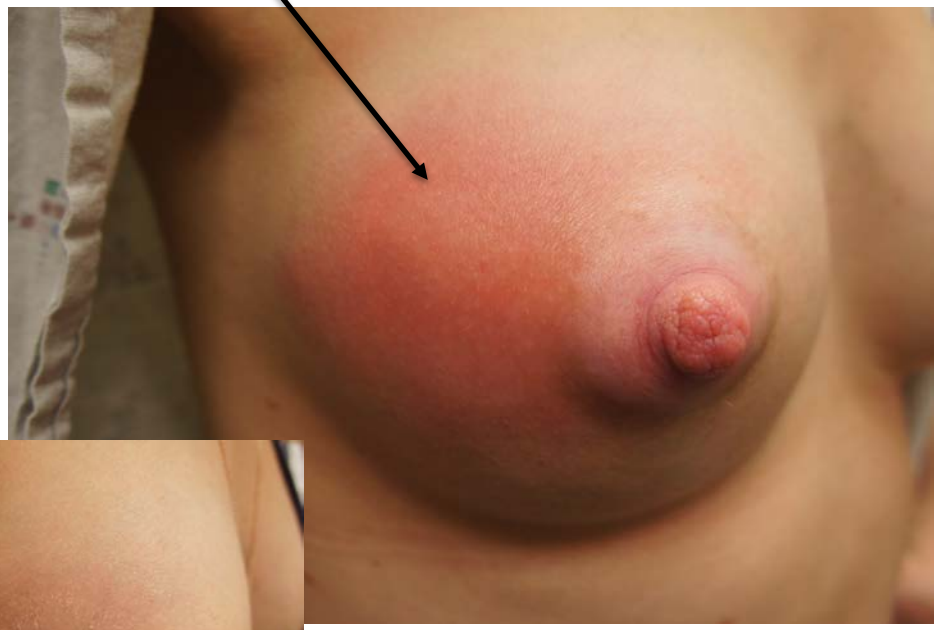
Many adaptations –
14F seroma cath cut

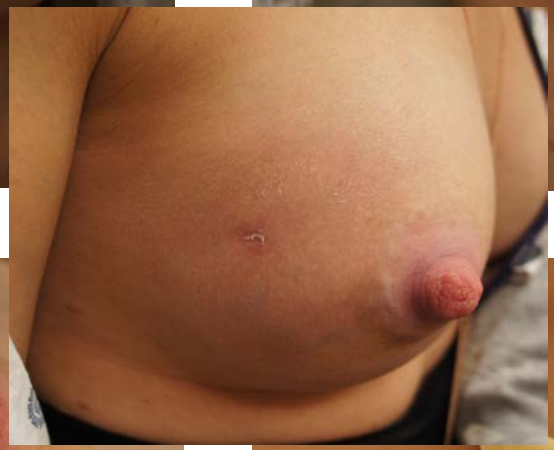
¼ inch
penrose
drain

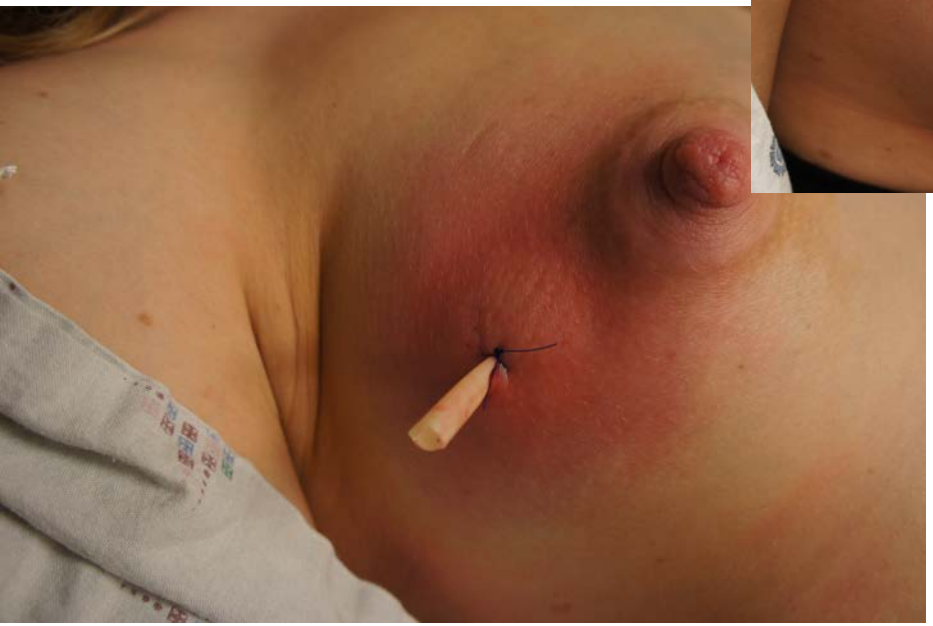
15 round blake drain with
bulb suction
(do not place on suction!)

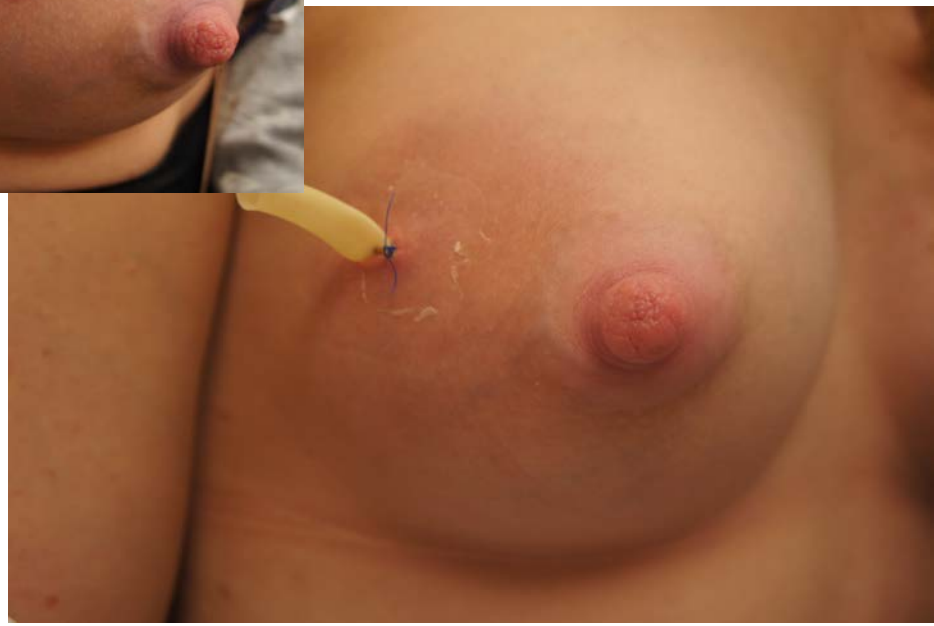
8F pigtail catheter with
gravity drain bag

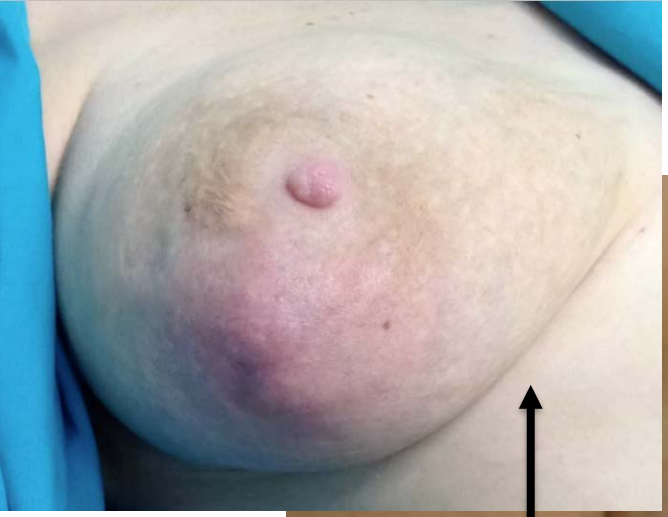




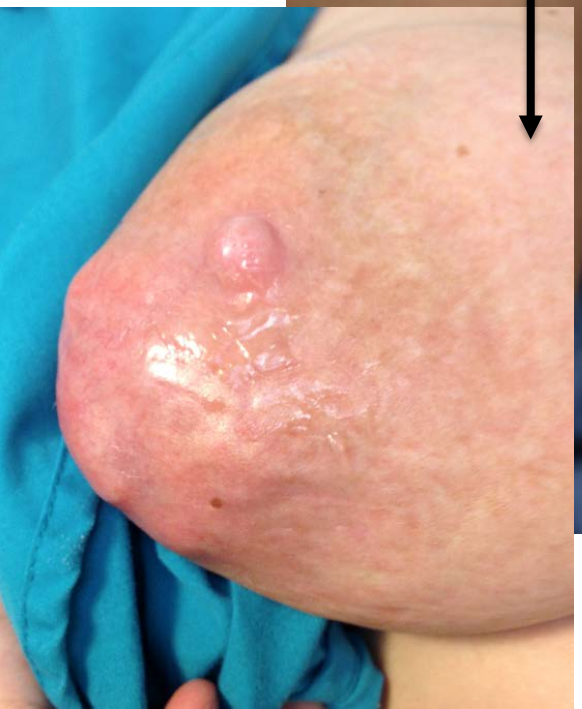


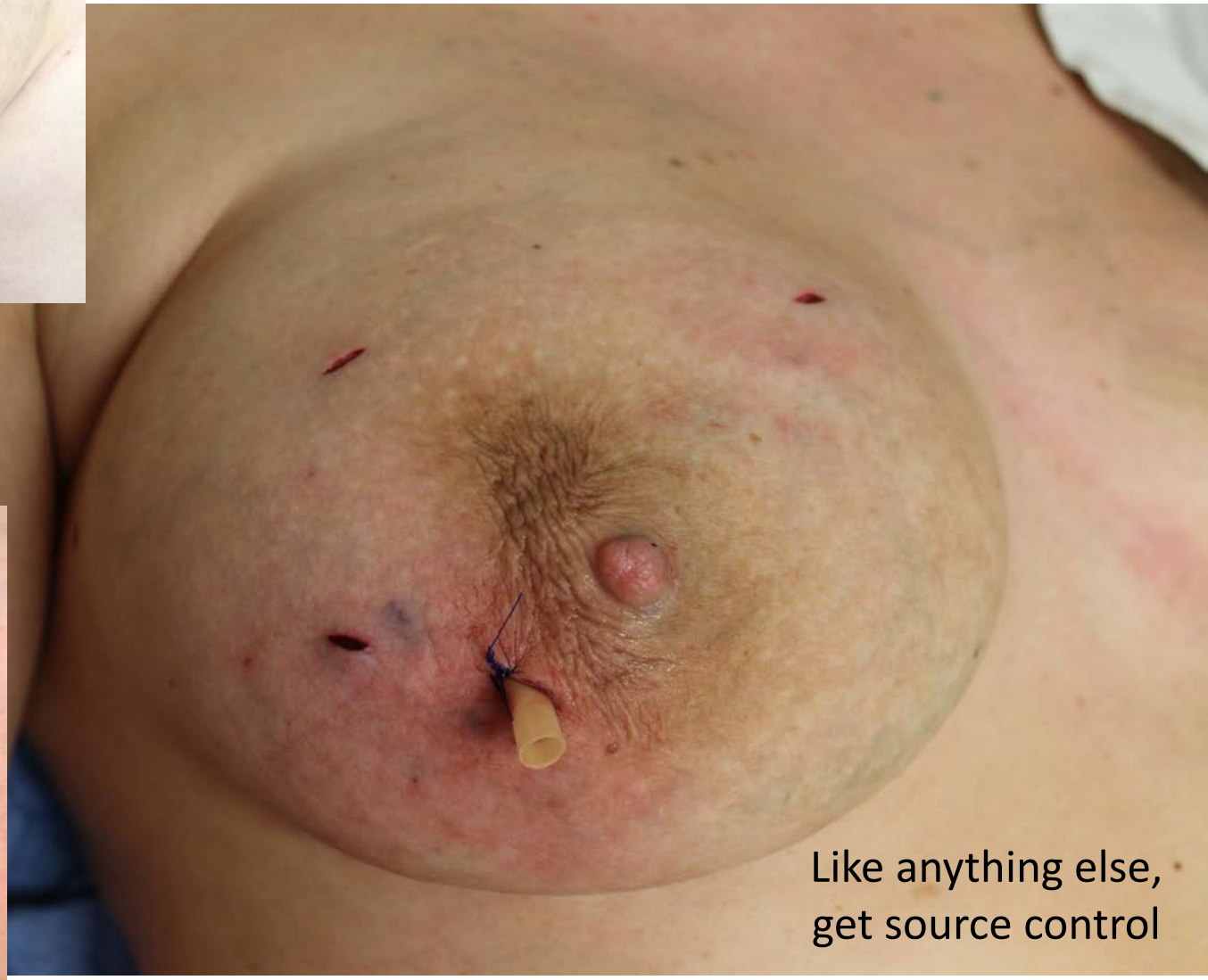






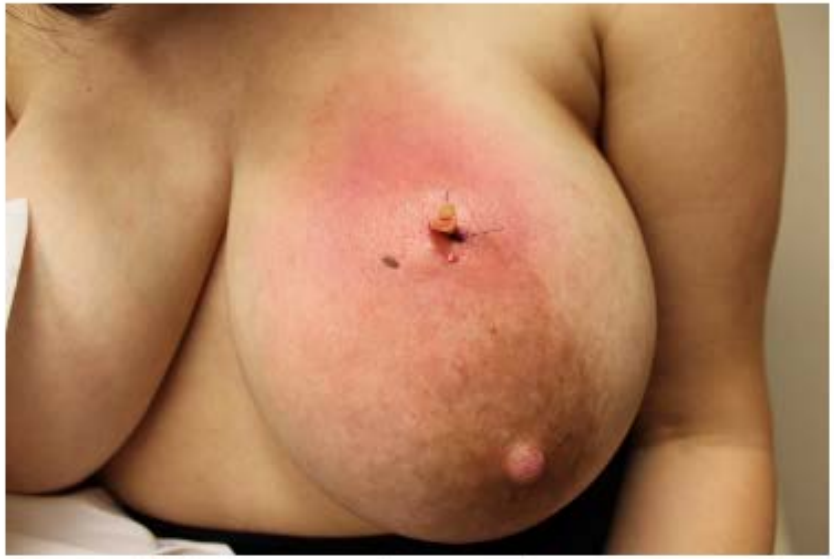
Abscess 10 and 10.5 weeks PP



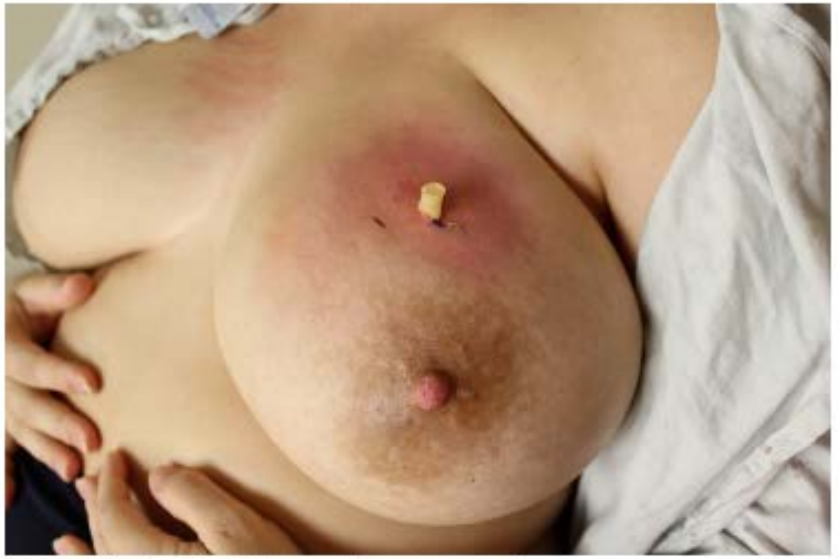


Like anything else, get source control

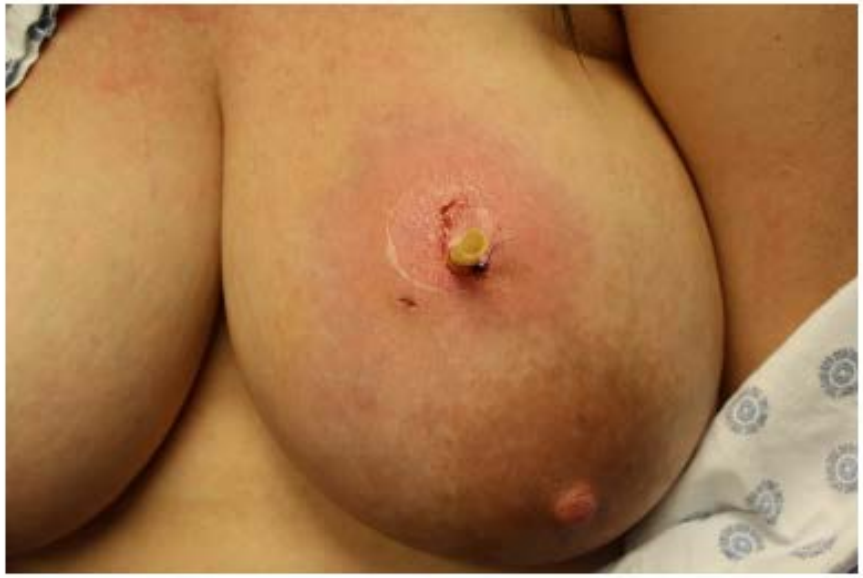
Left photos: Kevin Rodbell, MD



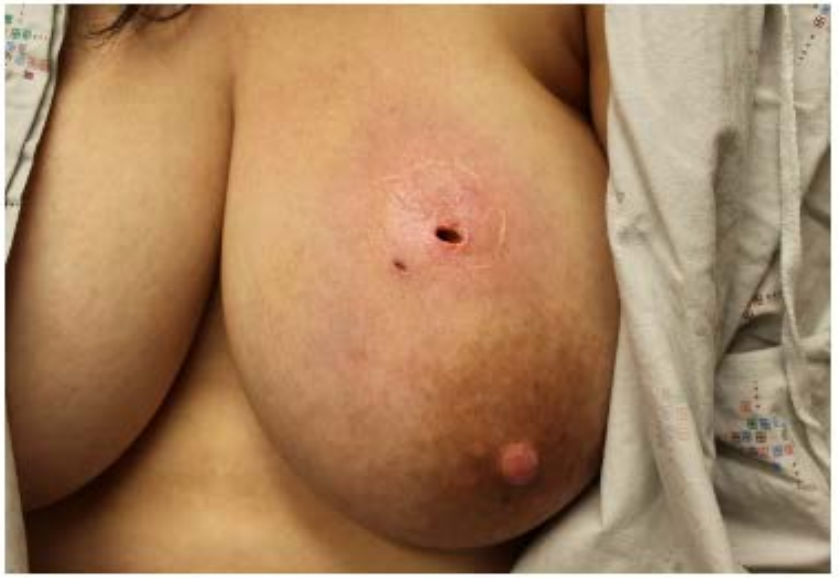
Day of left breast abscess drainage



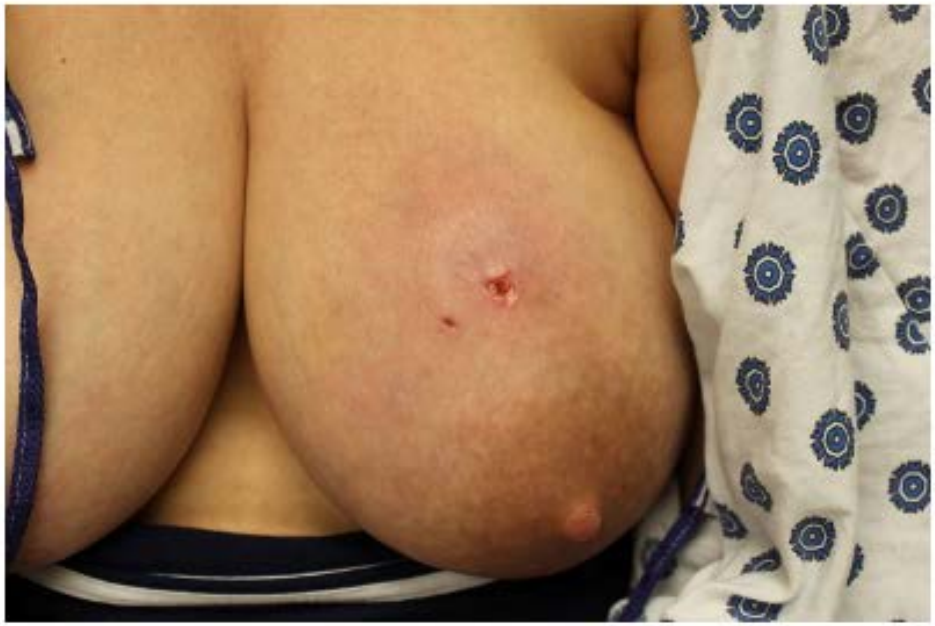
Post drain day #1: persistent erythema, no undrained fluid collection: antibiotics changed



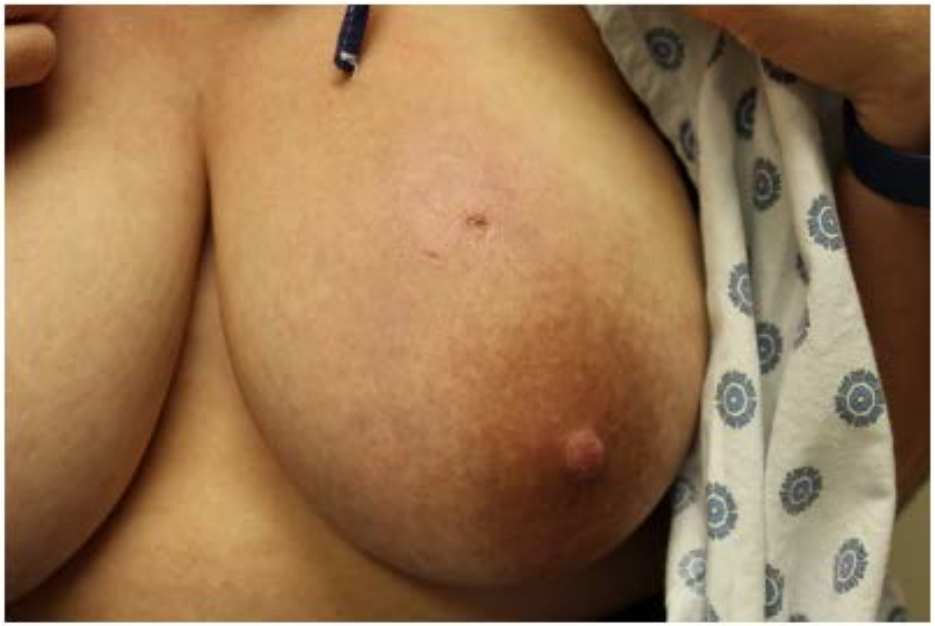
Post drain day #2: improved erythema



Post drain day #3: drain removed



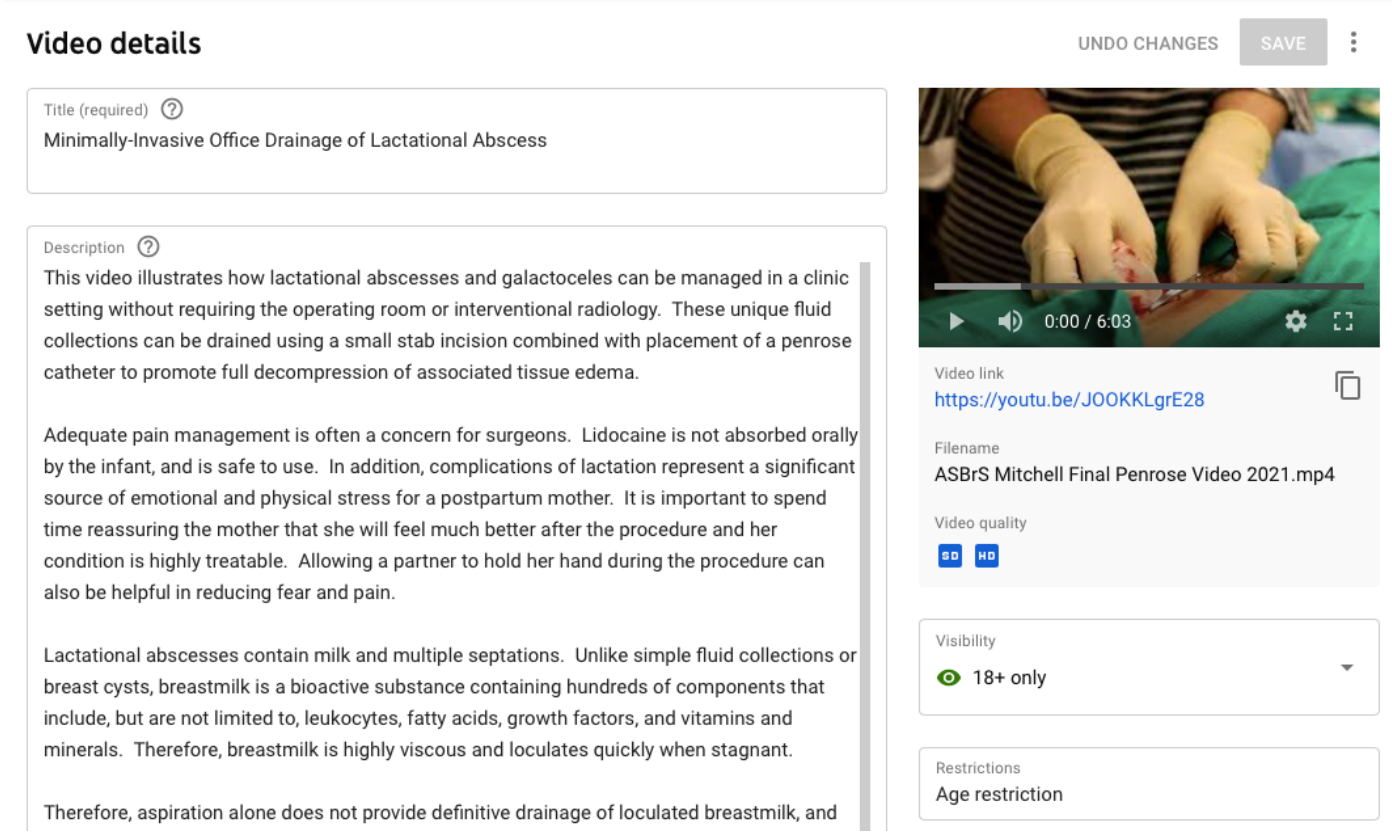
Post-drain removal day #2: closing drain site



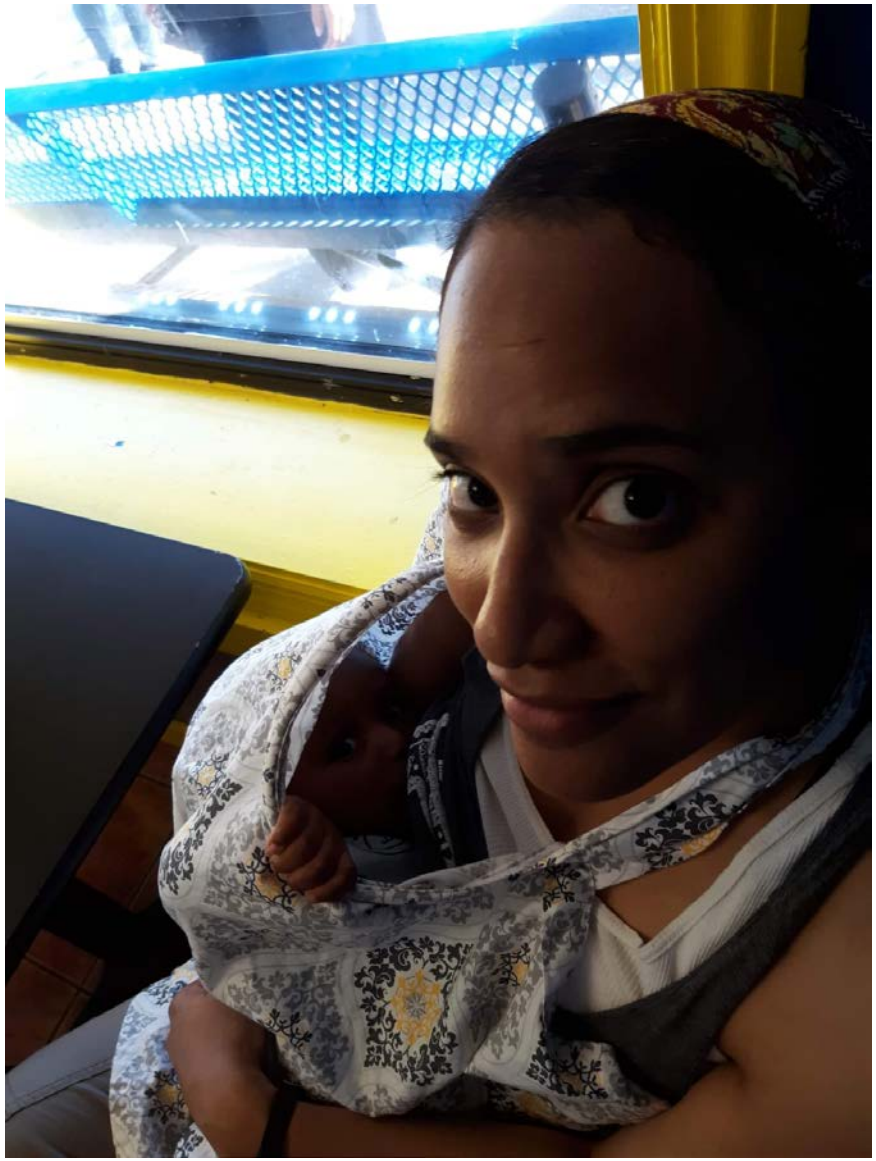
Post drain day #10: closed, healed, no residual erythema

“How I Do It” Video Link

- https://youtu.be/JOOKKLgrE28

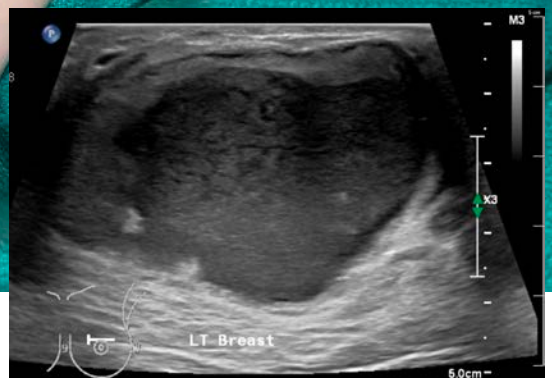


Continue to feed (but not overfeed!) from affected breast



Early Intervention, Support, and Encouragement

Don’t Separate Mom and Baby If Mom Wants Baby There

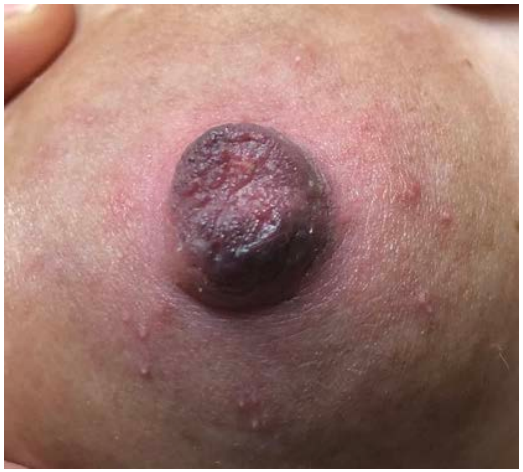


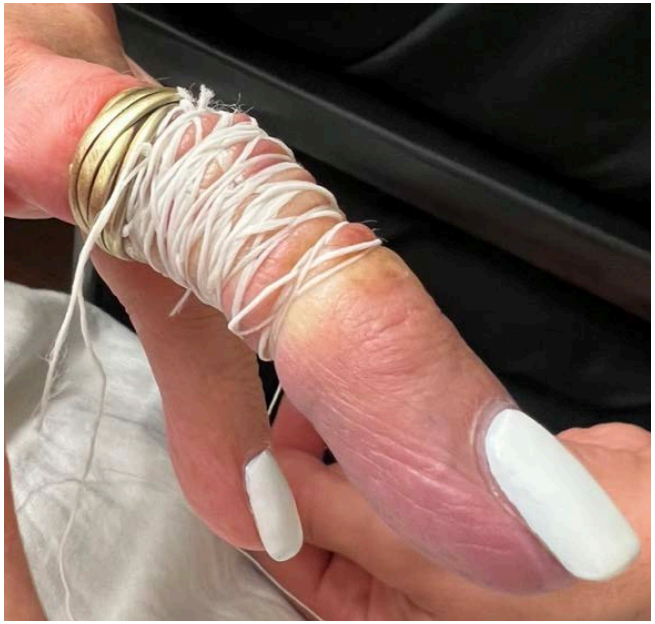
Dump the Pump!

- Excessive pumping causes many complications
- Can stimulate production without removing milk the way a baby would
- Adds stress to mom
- Hand express if possible or baby on breast

Pump Dependent Patients

- Pump only volume that baby needs
- If no milk is flowing, you MUST stop. The patient may have low production, but you still have to treat acute inflammation.
- Adding cars to a traffic jam makes it worse (and may result in an abscess). You may want to feed a malnourished person with a bowel obstruction, but you have to relieve the obstruction first.
- Reassure and counsel anxious patients that you can later increase production



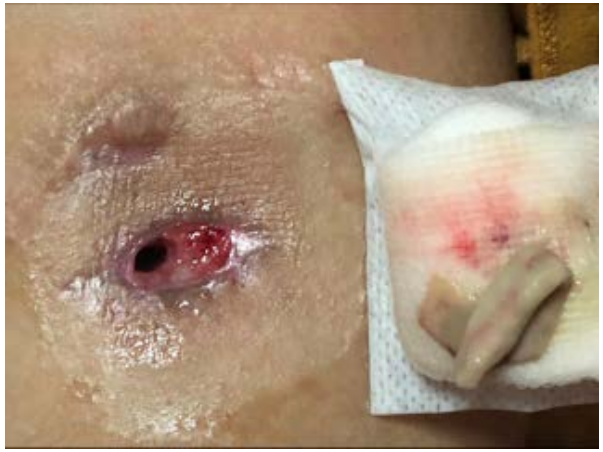


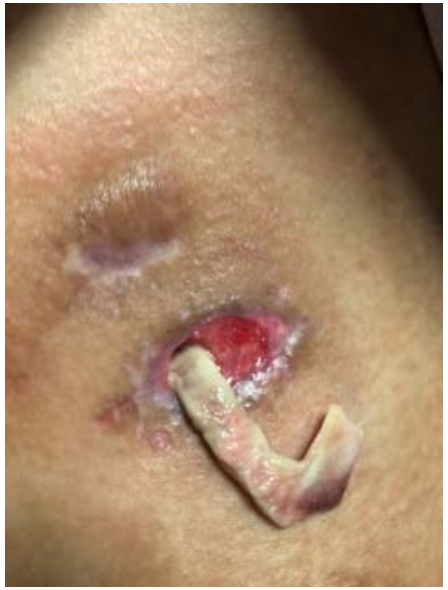
Sack the Pack

- Adds stress to mom and provider
- Lactating breast not meant to granulate
- Potentiates extended wound healing time and open wound

What Happens When You Pack?

- Packing is soaked immediately with milk
- Open wound
- Excessive granulation tissue
- PROLONGED HEALING TIME





Images: Ellen Nepilly

LACTATIONAL MASTITIS ALGORITHM

Mastitis

If concerned for abscess, order diagnostic ultrasound.
In obvious abscess, clinical diagnosis may be made ->
Erythema, induration, skin attenuation, failure to improve w/ antibiotics

Ultrasound Without Abscess

- Many cases resolve with ice, ibuprofen, no massage, and not overfeeding; reassess in 24 hours and start antibiotics if not resolved
- Dicloxacillin 500mg QID
- If history of MRSA: Clindamycin 300mg QID or TMP/Sulfa DS BID
- Note: Keflex has poor penetration in lactating breast tissue
- OTC probiotics may also help

Questions?
PhysicianGuideToBreastfeeding.org

Abscess

- 11 blade stab incision with penrose drain placement, as aspiration may require repeat procedures for loculated collection and sticky milk
- If >5cm consider IR consult for pigtail placement if undrained by above method
- Oral antibiotics as above; no IV antibiotics or hospital admission unless severe sepsis
- Bacterial culture, narrow antibiotics based on results

Phlegmon

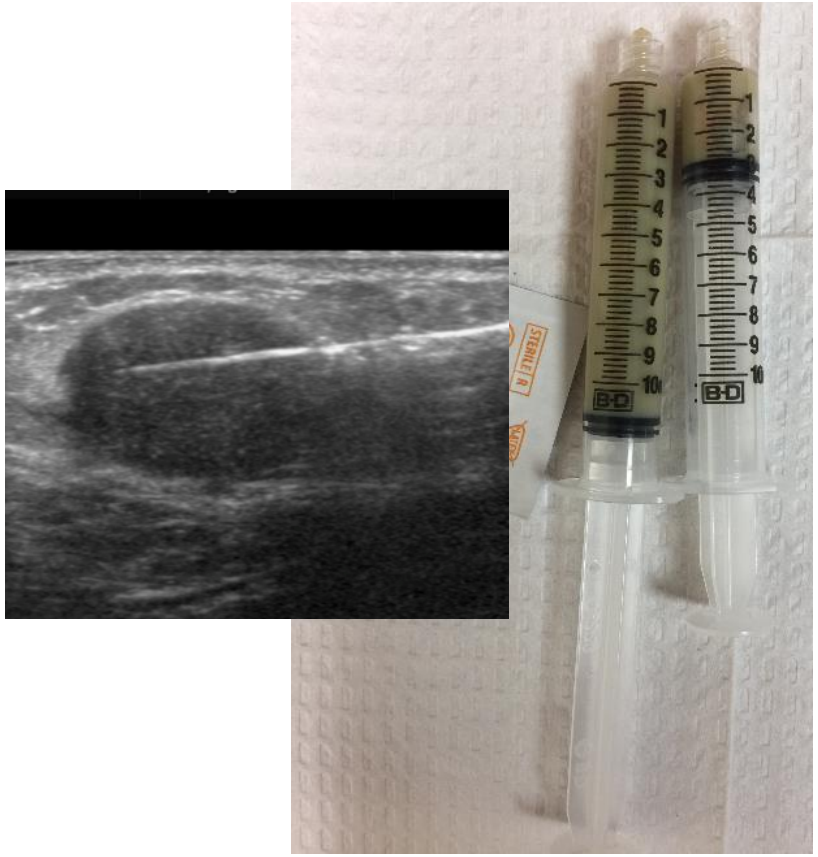
- Oral antibiotics as above; may need prolonged treatment until clinical resolution
- Repeat ultrasound in one week if no clinical improvement
- Drainage if abscess develops
- Follow up with breast surgery, ultrasound 1-2 months after clinical resolution to r/o underlying mass

Additional Information

- Ice, Ibuprofen alternating with acetaminophen q2 hours for tissue inflammation
- NO MASSAGE: worsens tissue edema and injury
- Breastfeed from affected side, but do not overfeed
- Antibiotics are safe; no need to pump and dump
- Physiologic nursing: avoid pumping
- Treat hyperlactation: no “pumping to empty,” no milk production in excess of baby’s intake
- No nipple shields: non-physiologic milk removal

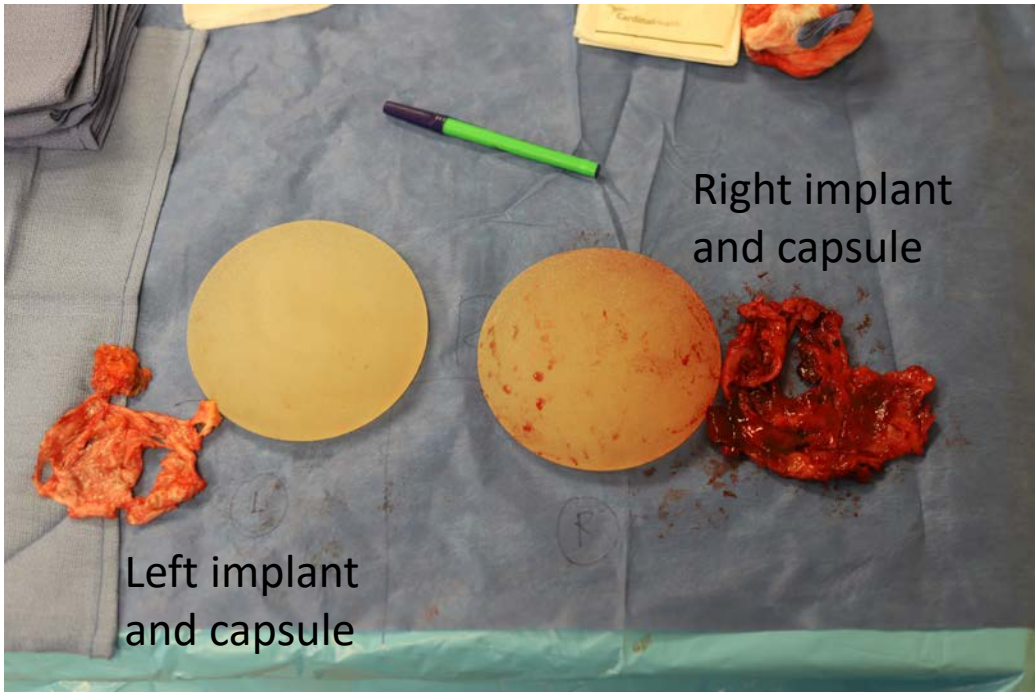
Galactocele Treatment: Present

- Aspiration
- However, stagnant milk is sticky and loculated and difficult to remove via a needle
- If requires repeated aspiration, drain placement with 11 blade stab incision or Interventional Radiology

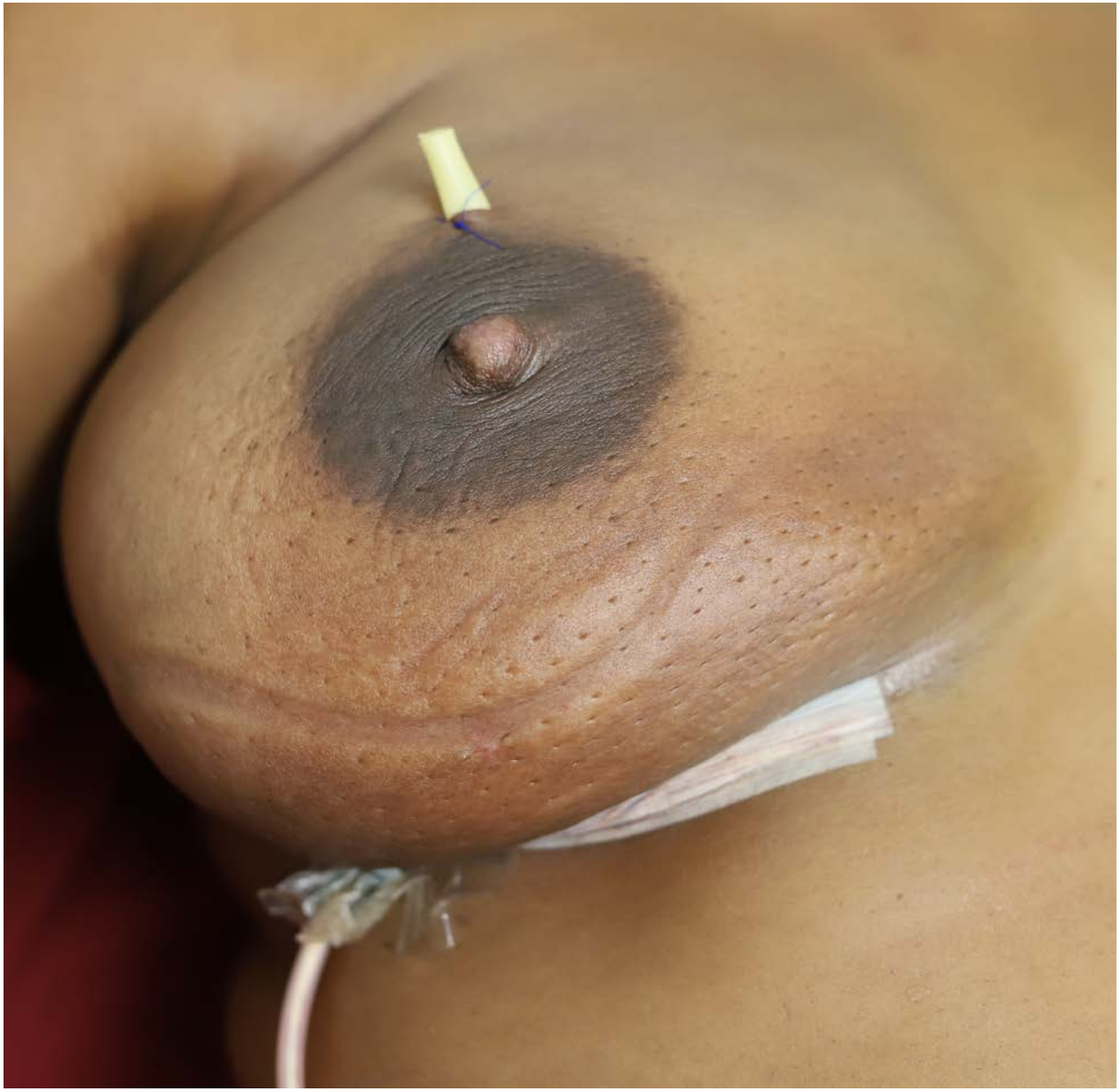


Ghosh et al Breast J 2004

Accessing left uninfected capsule via IMF incision



Post op day 6



Post Op 6 Months

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BREAST: CASE REPORT

Management of Infected Galactocele and Breast Implant with Uninterrupted Breastfeeding

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Author Information

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OPEN | ASSOCIATED VIDEO | Metrics

Abstract

Summary:

Infected breast implants during lactation present a rare but challenging clinical scenario that may result in early cessation of breastfeeding and unnecessary morbidity to mother and infant. We present the case of a 39-year-old African American primigravid woman with a history of bilateral retropectoral textured implants placed three years prior. Five days after delivering a healthy, full-term infant via cesarean section, she sought evaluation for nipple pain and trauma. She was instructed to use a nipple shield and pump every 2–3 hours in addition to breastfeeding, which resulted in iatrogenic hyperlactation. One week postpartum, the patient was started on antibiotics for presumed mastitis. Ultrasound demonstrated a complex fluid collection at the 12 o'clock periareolar position, as well as peri-implant fluid. She subsequently underwent aspirations of a periareolar complex galactocele and aspirations of peri-implant fluid. She continued on antibiotics without improvement. The patient proceeded to implant removal and definitive drainage of the galactocele at four months postpartum. Throughout her course, the patient provided her infant with exclusive breastmilk, including breastfeeding in the perioperative area of the operating room. This case demonstrates an example of safe surgical removal of infected breast implants and management of an infected galactocele without interruption of breastfeeding.

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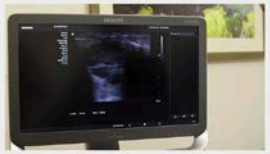
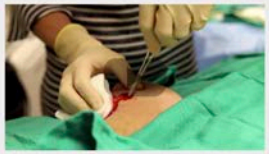
infectious process. Both surgeons recommended removal of implants without interruption of breastfeeding. The patient was instructed to stop pumping to resolve iatrogenic hyperlactation and return to physiologic breastfeeding. She was changed from cephalexin to Bactrim for methicillin-resistant *Staphylococcus aureus* coverage.



Video 1 : from "Management of Infected Galactocele and Breast Implant With Uninterrupted Breastfeeding." This video shows a demonstration of galactocele drainage and penrose drain placement in an office setting. Part 1.



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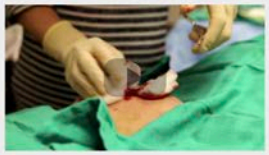

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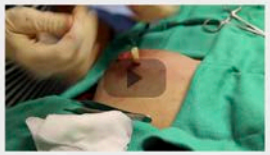
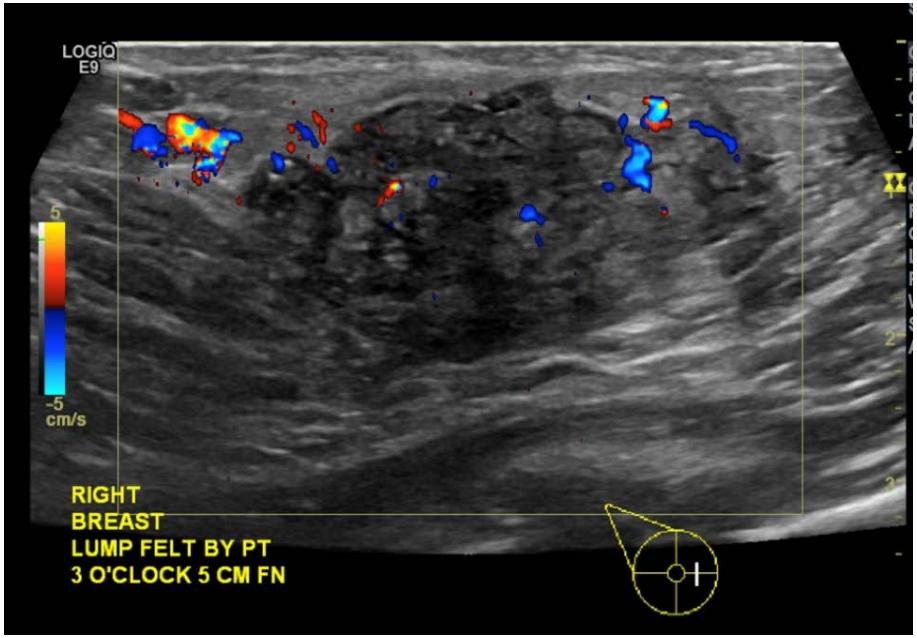


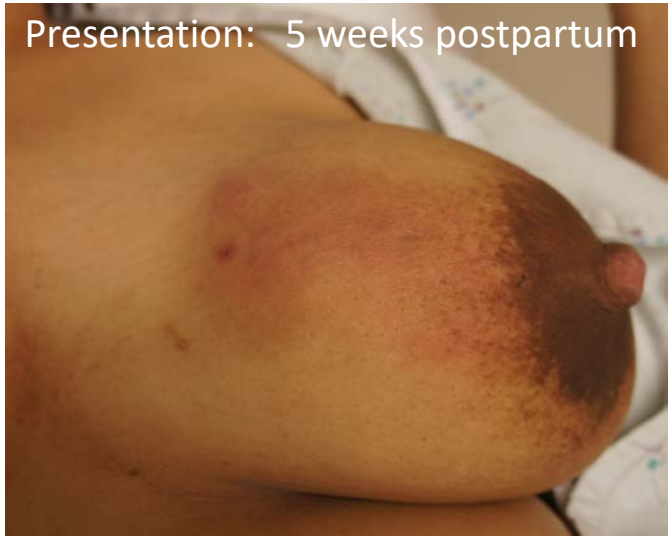
Video 4 : from "Management of Infected Galactocele and Breast Implant With Uninterrupted Breastfeeding." This video shows a demonstration of galactocele drainage and penrose drain placement in an office setting. Part 4.

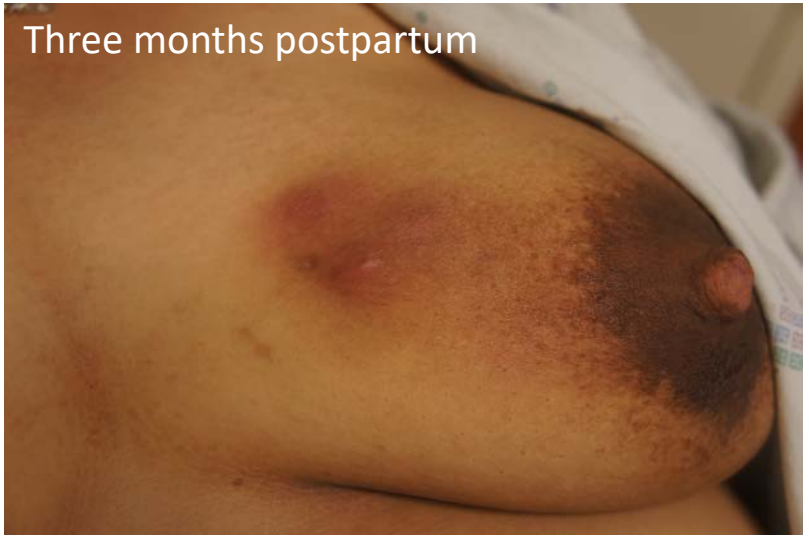
Phlegmon Treatment

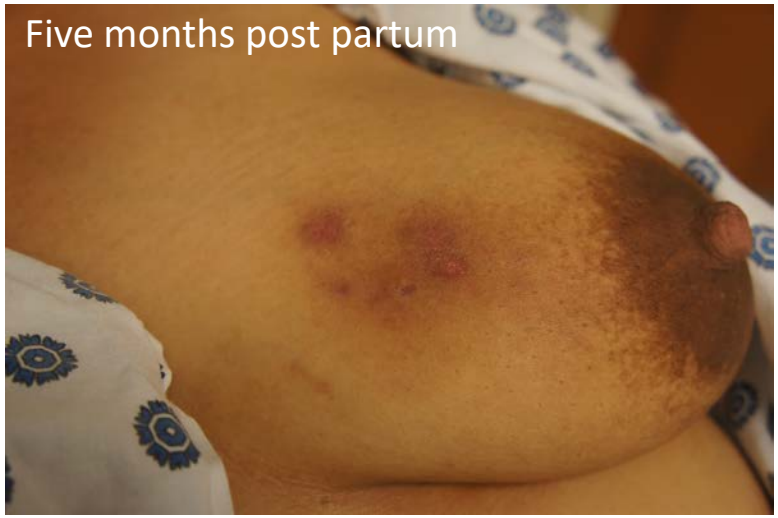
- +/- Antibiotics
- +/- drainage catheter
- Q3 month interval exam to ensure resolution
- Biopsy if suspicious features

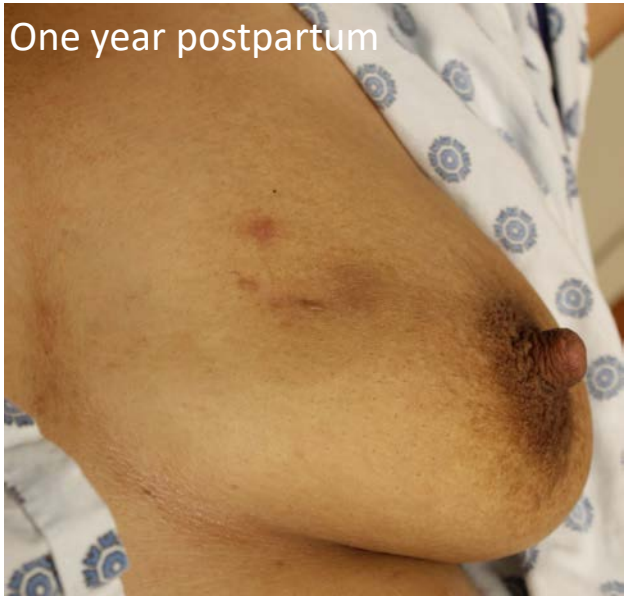


Lactational phlegmon

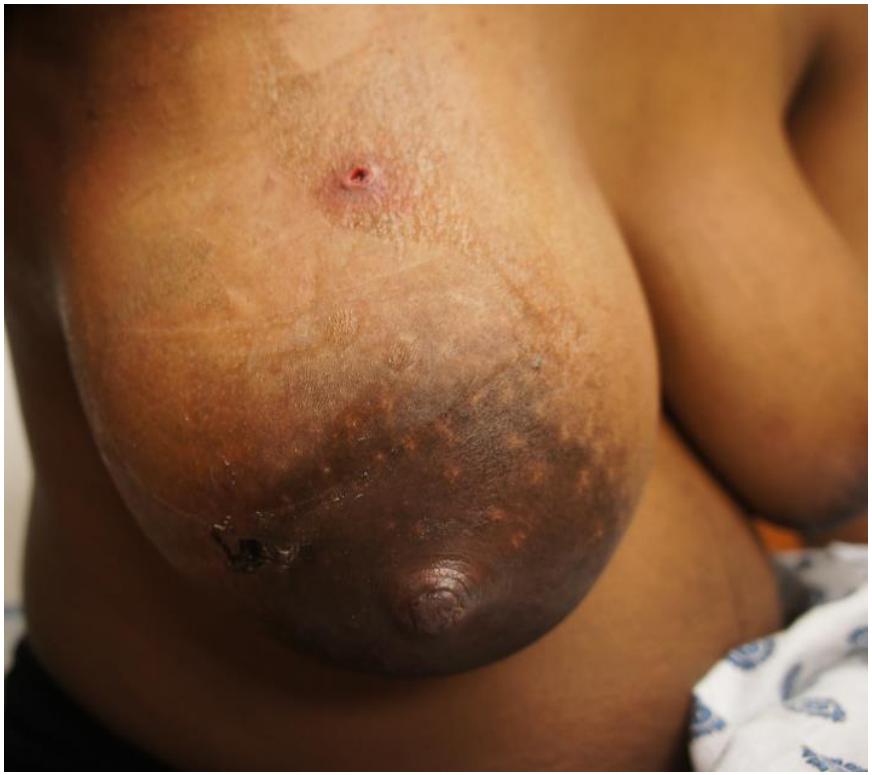








Milk Fistula

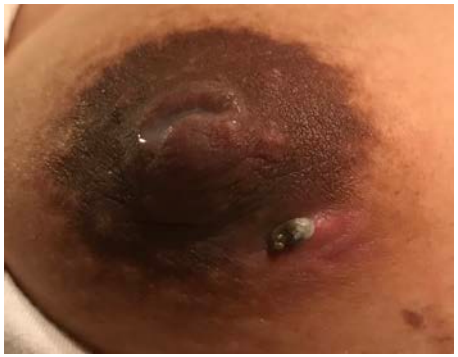


- Rare complication: 1.3% incidence in lactating cohort
- Management
  - Feed physiologically
    - Lactating breast very vascular, wants to heal itself if managed properly
  - Must address underlying factors
    - Hyperlactation, excessive pumping, nipple shield use

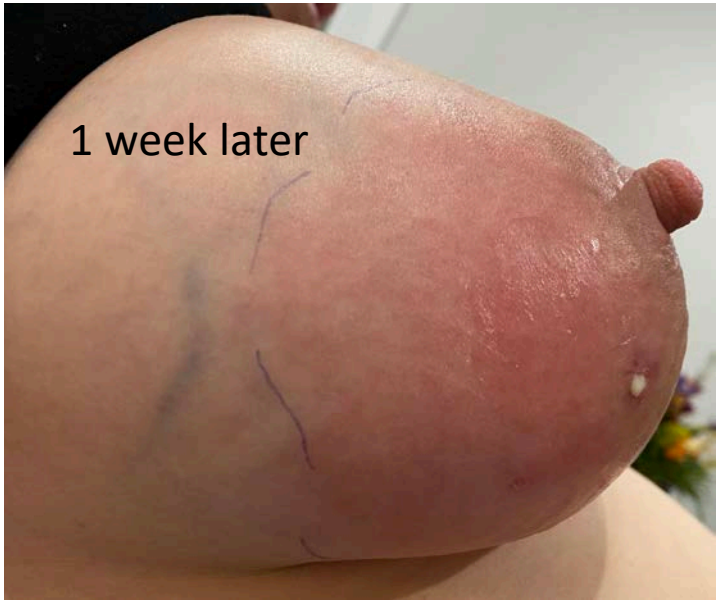
Johnson and Mitchell Breast Disease 2021

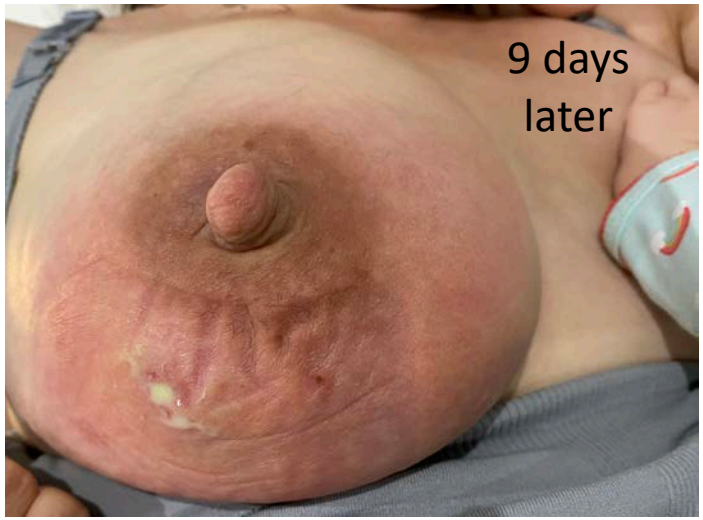
But This Fistula Happened …

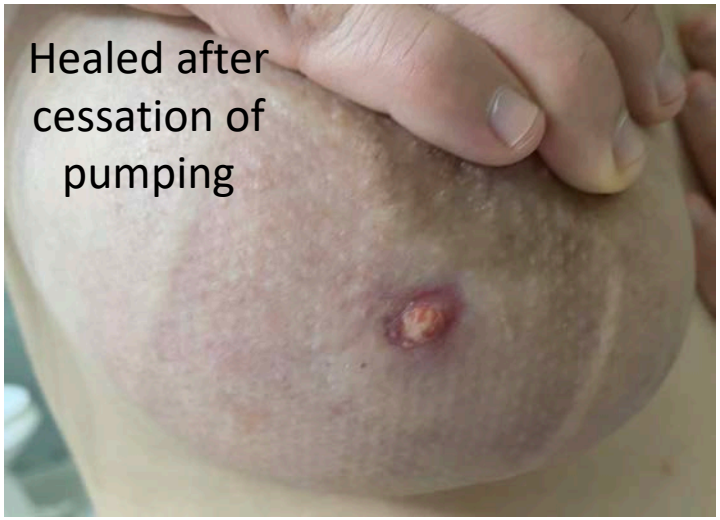
- Pumping to empty breast stimulates hyperlactation, potentiates trauma, and WILL form a fistula and/or hypertrophic granulation tissue if continued



Consequence of patient told to “pump to empty”







Milk Fistula
in area of pump trauma

Attention to Mental Health

- Complications are painful and traumatic
- Patients often have been to multiple providers and given inaccurate information or incorrect advice
- Often feel frustrated, ignored, not heard
- Can result in hypervigilance/anxiety and even OCD about the experience

Take Home Points

- Physiologic Feeding
  - Do not try to “keep breast empty” as this worsens cycle of hyperlactation
- Eliminate pump
- NO MASSAGE
  - WORSENS INFLAMMATION and causes TISSUE TRAUMA
- ICE and ibuprofen resolve vast majority of mastitis without antibiotics
- Therapeutic ultrasound
- Small caliber drain more definitive resolution than repeated aspiration of abscess/galactocele


Thank You!
PhysicianGuideToBreastfeeding.org

PHYSICIAN GUIDE to breastfeeding

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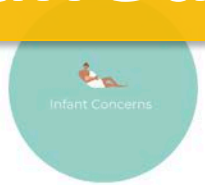

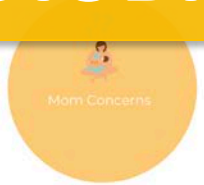

- Infant Concerns

Maternal Health and Illness
- Mastitis and Everything Related
- Nipples
- General Breast
- Postpartum Health
- Other Concerns

- Feeding By Age and Stage

- Pregnancy and Lactation
- Surgery and Breastfeeding
- Breast Cancer and Breastfeeding