The Difficult Nipple

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OUTLINE

01 Conditions of the nipple are common presentations in breastfeeding medicine

02 Variations in nipple size and shape can present challenges for latching

03 Nipple pain is not normal but it is common

04 Nipple pain can be associated with nipple damage, nipple infections and skin conditions of the nipple

05 Nipple damage is a challenge for the treating doctor especially considering the many treatment products available

06 Nipple pain and damage can negatively affect breastfeeding, can contribute to a decline in maternal mental health are a common cause of premature cessation of breastfeeding

07 Understanding the common nipple conditions and how to manage these is important when providing medical lactation support

Managing nipple conditions in breastfeeding

The Assessment

-taking a history

-performing an examination

Define the main problems

Formulate a management plan (including medical and psychological support)

Taking a history

- Presenting problem
- Previous lactation history
- History of pregnancy and birth
- Medical problems since the birth for mother and baby
- Breastfeeding in hospital? At home?
- Past medical history in mother (inc physical, mental health, chronic pain conditions, Raynuads, recurrent candida, eczema)
- Medications, allergies
- Presenting problem – more detail if needed

A focused history for nipple problems

- When and how did problem start?
- How has it progressed?
- Are you having pain? Rate the pain, describe the pain, any radiation
- Aggravating factors
- Relieving factors
- What treatment have you used so far?
- What are you most worried about?

Performing an examination

- Privacy/Permission/consent
- Good lighting, magnification

Examination:

- General appearance – physical and psychological well being
- Nipple examination:

- appearance of nipples and areola

- colour (what is normal for them), skin of colour, skin changes, damage, discharge

- compare both sides

- palpate if needed

- Examine other areas if relevant – breast, axillae, skin elsewhere

NIPPLE CONDITIONS

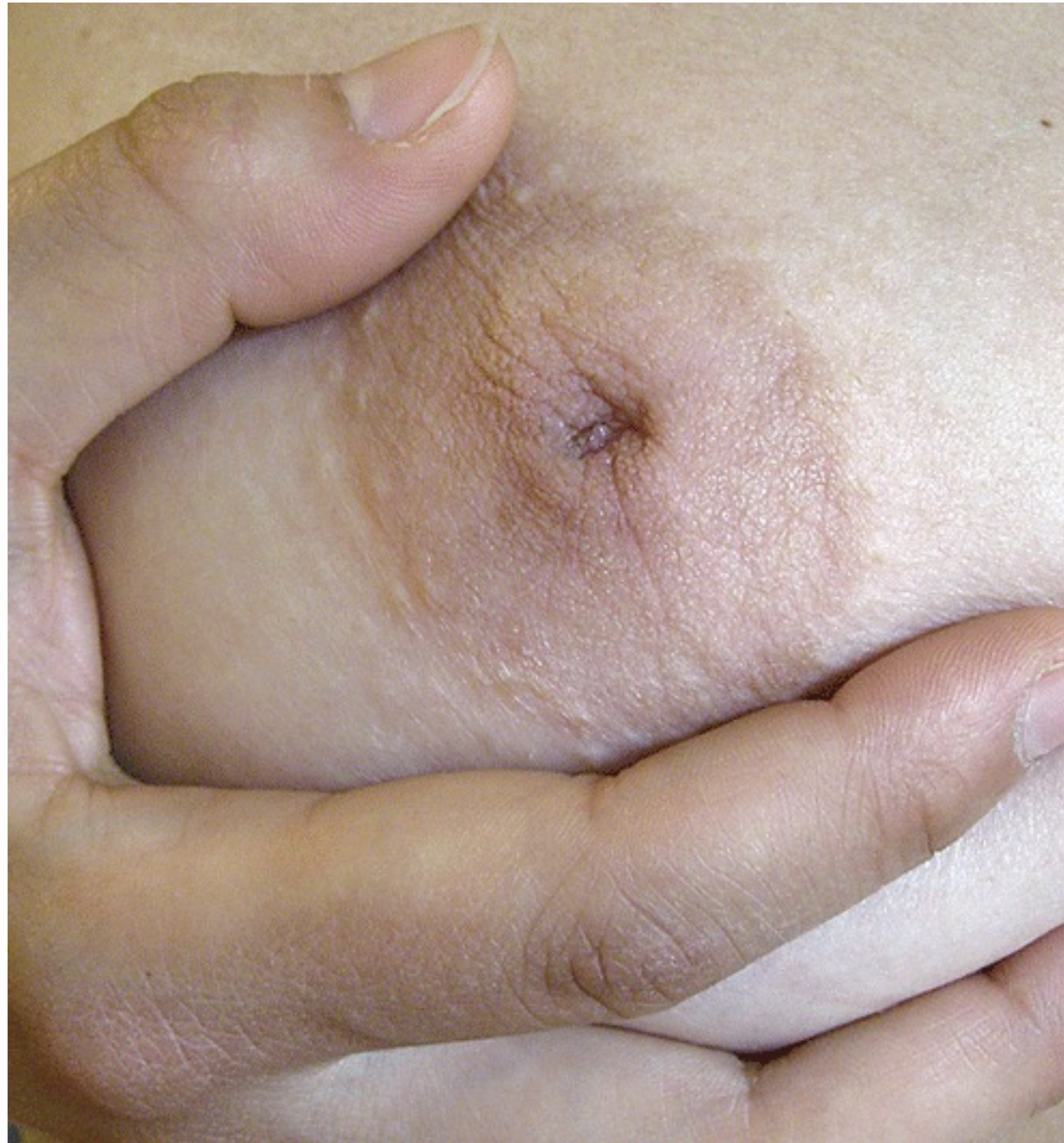
Common:

- Nipple pain
- Nipple damage
- Complications of nipple damage

Less Common:

- Bleeding nipples (other causes)
- Montgomery follicle swellings
- Nipple polyps
- Nipple vasospasm
- Nipple candidiasis
- Nipple dermatitis
- Nipple psoriasis
- Nipple hyperkeratosis
- Nipple white spot
- Herpes infection of the nipple
- Pump trauma

Options for inverted nipples



Denise Both & Kerrie Frischknecht, Breastfeeding: An Illustrated Guide to Diagnosis and Treatment © Elsevier 2008

Illustrated Guide to Diagnosis and Treatment © Elsevier 2008

To assist the latching:

- Draw nipple out manually
- Nipple stimulation, roll nipple base
- Mold the breast

- Pump – electric, manual silicone pump
- Shield use

Other options

- Nipple extraction devices
- Nipple surgery

Nipple pain

- 79% noted nipple pain before hospital discharge[1]
- 56% had nipple pain at 3 weeks[1]
- At 8 weeks 20% still experiencing nipple pain[1]
- Nipple pain and damage are associated with early cessation breastfeeding, depression and anxiety[2]

Managing Nipple Pain

General Principles

- ➢ Breastfeeding Support :
  - Position and latching
  - Treat underlying condition
  - Pain relief as needed
  - ➢ Emotional Support, Family/Community supports

Nipple damage

- Over 8 weeks 58% had nipple damage[1]
- At 8 weeks, 8% still had damage[1]

Potential causes:

- incorrect position and latch
- flat/inverted nipples
- oral anatomical issues in baby eg tongue tie
- pump trauma
- trauma(bite) from older infant

Nipple damage

Common types of damage:

- Grazes
- Blisters
- Crack at tip
- Crack at shaft
- Crack at junction nipple areola (crescent shaped)

Nipple damage - complications

- Pain
- bleeding
- nipple infection
- hypergranulation
- delayed nipple wound healing
- potential entry point for breast infection
- early cessation breastfeeding

Nipple damage - Management

- optimise position and latch
- appropriate nipple wound care
- reduce pump trauma
- consider frenotomy if tongue tie is present
- provide support, give realistic time to healing

Nipple wound care

Moist wound healing – promotes faster healing

- Avoids further tissue loss from the wound drying out
- Promotes the body’s own proteolytic enzymes which remove necrotic and devitalized tissue
- Enhances angiogenesis and collagen deposition
- Improves keratinocyte migration

Nipple wound care

Options:

- Appropriate washing (soap and water)

What to apply?

- Breastmilk
- Moisturising ointments eg Purified lanolin, nipple butter/balms, other
- Other topical applications: Saline spray, Medihoney, Superoxide solutions
- Dressings
- Nipple protection
- Low level laser therapy

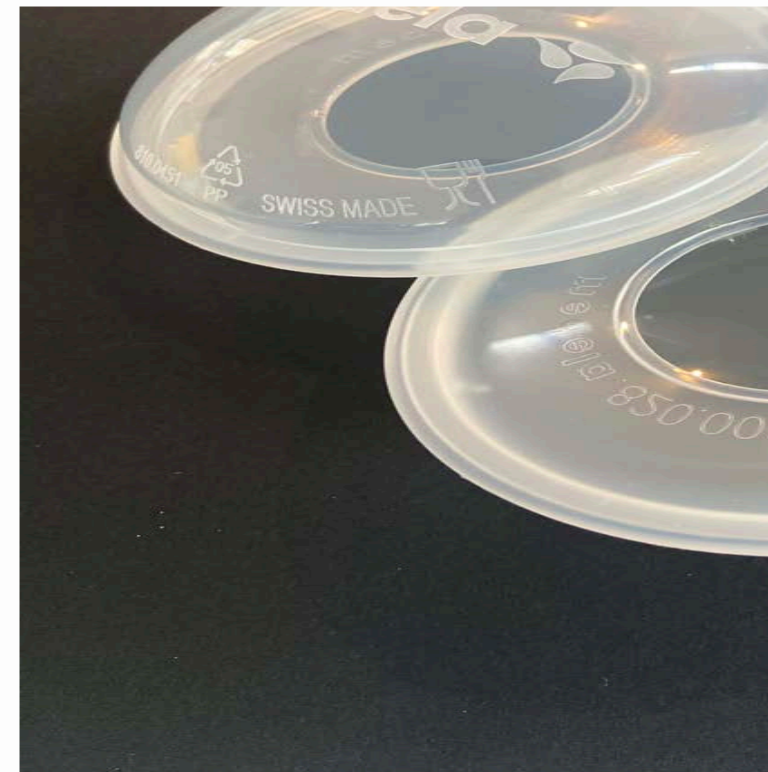
Nipple wound care

Dressings :

- hydrogel, gel-impregnated compresses/pads/discs
- hydrocolloid dressings
- absorbent foam dressings

Nipple wound care

- Nipple protection eg Silver cups/caps, Breast shells



Silver caps/cups study

Breastfeed Med. 2015 Jun;10(5):232-8.
doi: 10.1089/bfm.2014.0177. Epub 2015 May 19.

Evaluation of the effectiveness of a silver-impregnated medical cap for topical treatment of nipple fissure of breastfeeding mothers

Marrazzu A et al

- RCT
- Evaluated effectiveness, tolerability of silver caps compared to standard care
- Recruited 40 women with symptomatic nipple fissures in lactation
- Both received BF education by IBCLC
- Daily questionnaire, Clinical evaluation D0,D7, D15. Photographic recording D0, D15

- Results:
- Silver cap more effective than standard care for resolution of painful symptoms
- Promoted healing process of lesions
- Well tolerated by participants
- No local or systemic reactions reported

Nipple wound care - other topical applications

- **Medihoney** – sterilized, medical grade honey, no risk of infant botulism

Antimicrobial effect

- High osmolality – inhibits growth of microorganisms
- Hydrogen Peroxide – antibacterial activity without damaging skin
- Antibacterial phytochemicals – esp found in honey from mānuka trees (*Leptospermum scoparium*)

(https://dermnetnz.org/topics/honey)

- **Superoxidised solution eg Hypochlorous acid (HOCL)**

- Low concentration sodium chloride, dissolved in water, into which an electric current is passed, producing a mixture of charged particles (ions), mostly comprised of combinations of hydrogen, oxygen and chlorine
- Disrupts the cell wall of bacteria and other organisms
- May help break down molecular structure of biofilm on which the bacteria live as well as reducing the amount of bacteria present
- Effective antibacterial action[3], minimal adverse effects[4,5]
- Used as antiseptics to prevent wound infections and in the management of chronic wound biofilm
- Less risk of resistances than other commonly used treatments

(https://dermnetnz.org/topics/superoxidised-solution)

Low level laser therapy

- Painless
- Safe

Benefits[6,7,]

- Accelerates wound healing

- stimulation of cellular processes
- improves local blood flow

- Reduction of inflammation
- Pain reduction
- Prolonged exclusive breastfeeding
- More clinical trials needed to optimize laser therapy protocols for breastfeeding women[8]

Managing complications of nipple damage

Nipple infection

- if bacterial infection likely (crusting, yellow, weepy) – presumed *Staph* aureus
- apply topical antibiotic ointment
Mupirocin vs combination ointment eg Kenacomb (similar to APNO)
- Topical antibiotics vs oral antibiotics
- When to swab?

Nipple infection

- slough – the surface material covering an ulcer, made up of exudate and necrotic tissue
- bacterial biofilm - thin layer of bacteria and secreted polymers adhering to the surface of a structure (slimy, gelatinous)

https://dermnetnz.org/glossary

Biofilm

Biofilm may impede healing by:

- impaired epithelialization and granulation tissue formation
- reduced susceptibility to antimicrobial agents

Strategies to manage biofilm/encourage wound healing:

- debridement
- appropriate antimicrobial therapies

Managing complications of nipple damage

Hypergranulation of nipple wound

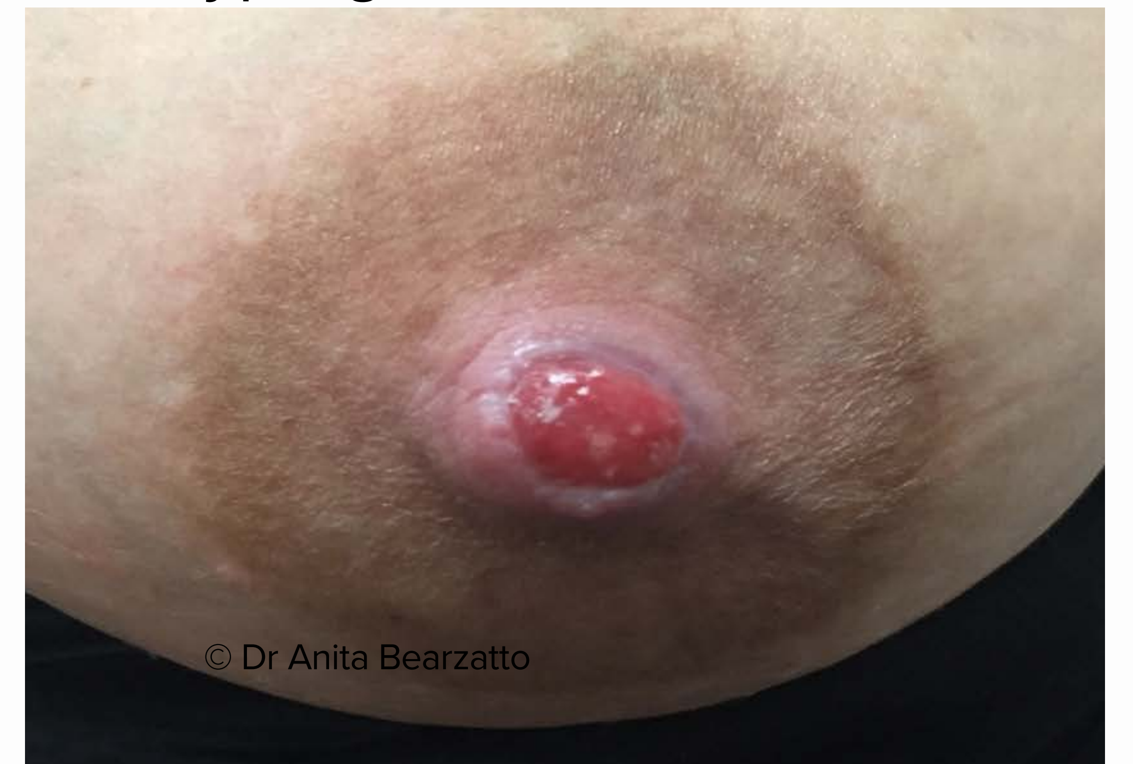
Treatment options:

- steroid cream
- silver nitrate (rarely needed)

Normal granulation tissue

https://www.woundsource.com/blog/getting-know-granulation-tissue-and-what-it-means-wound-care

Hypergranulation



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Managing complications of nipple damage

Delayed nipple wound healing

Reasons:

- ongoing trauma (latching issues, pump trauma)
- large or deep wound
- infected wound
- poor healing in mother (poor nutrition, immune compromise, diabetes)
- ?vasospasm contributing to poor circulation
- consider Paget disease (uncommon)

Managing complications of nipple damage

Delayed nipple wound healing

Options :

- trial **resting nipples** by (expressing and feeding expressed breastmilk)
- trial **nipple shields** eg for flat/inverted nipples or damaged/painful nipples

Provide:

- education
- support ++
- regular review
- provide realistic expectation of time to heal especially if continuing to breastfeed

Bleeding nipples - other causes

- Rusty pipe syndrome
- Intraductal papilloma
- Paget disease

Rusty Pipe Syndrome

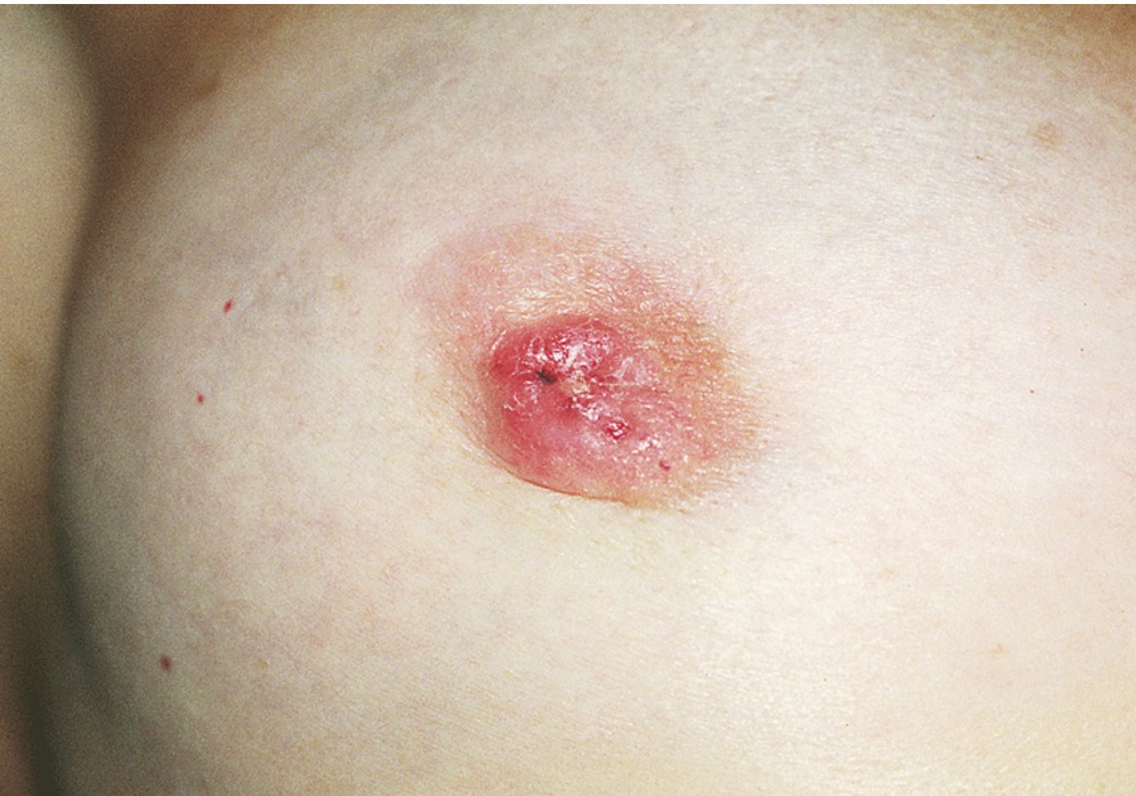
- Rusty-looking breastmilk caused by vascularisation of ducts and alveola during pregnancy and early lactation
- Rare 0.1% of breastfeeding women (higher risk in primips)[8]
- Self limiting, resolves within days
- Mostly bilateral, **multiple ducts**
- More common when colostrum is more intensely produced

Intraductal papilloma

- Tiny polyp-like growth within the milk ducts beneath the nipple
- Benign tumours made up of fibrous tissue and blood vessels
- Bloody nipple discharge from **one duct**
- May have palpable lump under the areola
- Surgical excision recommended to resolve symptoms and to exclude carcinoma

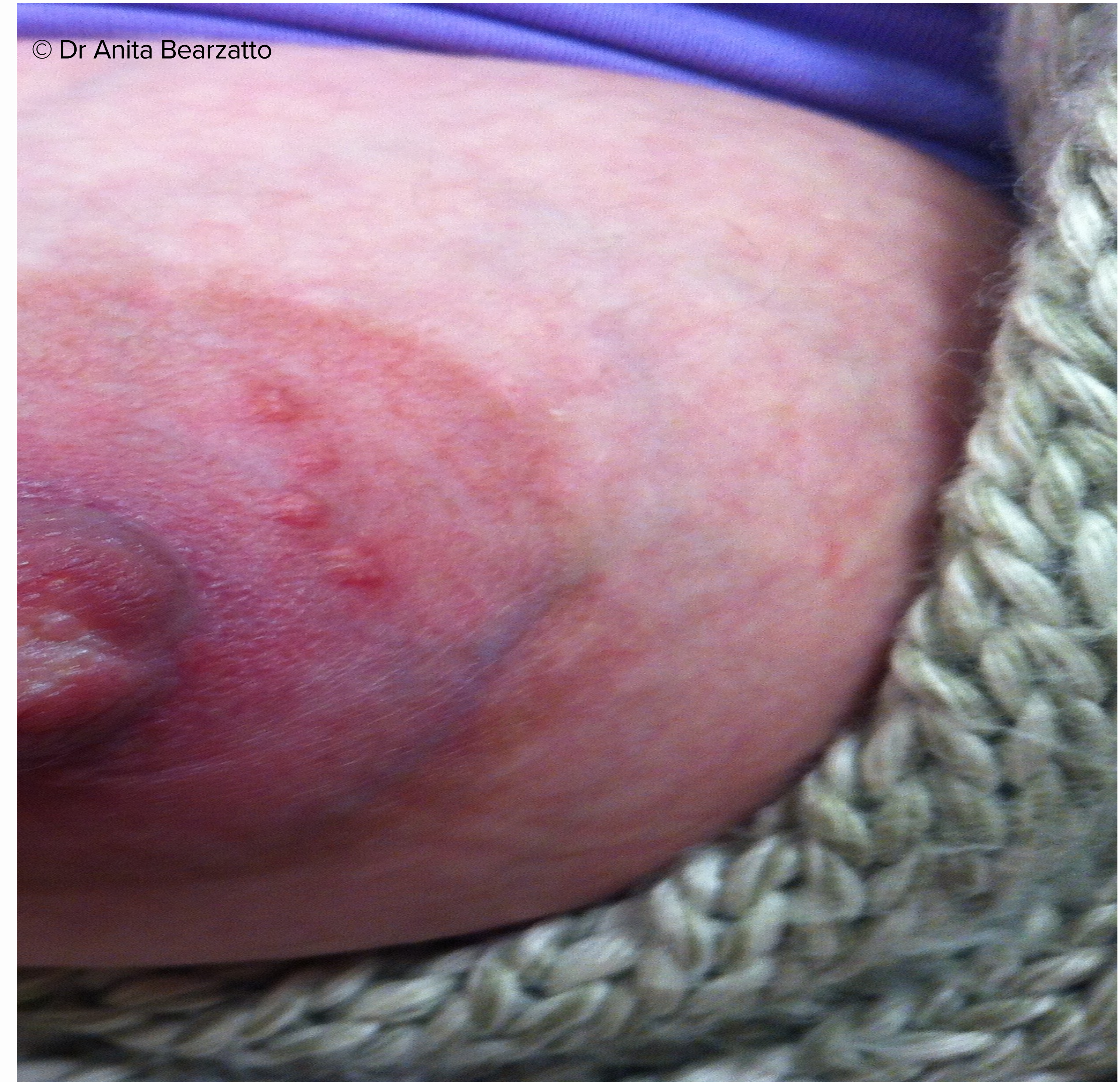
Paget disease

- Rare form of breast cancer (1-3% of all breast ca)[9]
- Very rare in breastfeeding
- Mostly affecting women in 50s -60s
- Starts as eczema like lesion on nipple and areola
- Most diagnosed also have one or more tumours in the same breast(ductal carcinoma in situ or invasive breast cancer)
- Treatment – surgical excision, +/- RTx, CTx, other

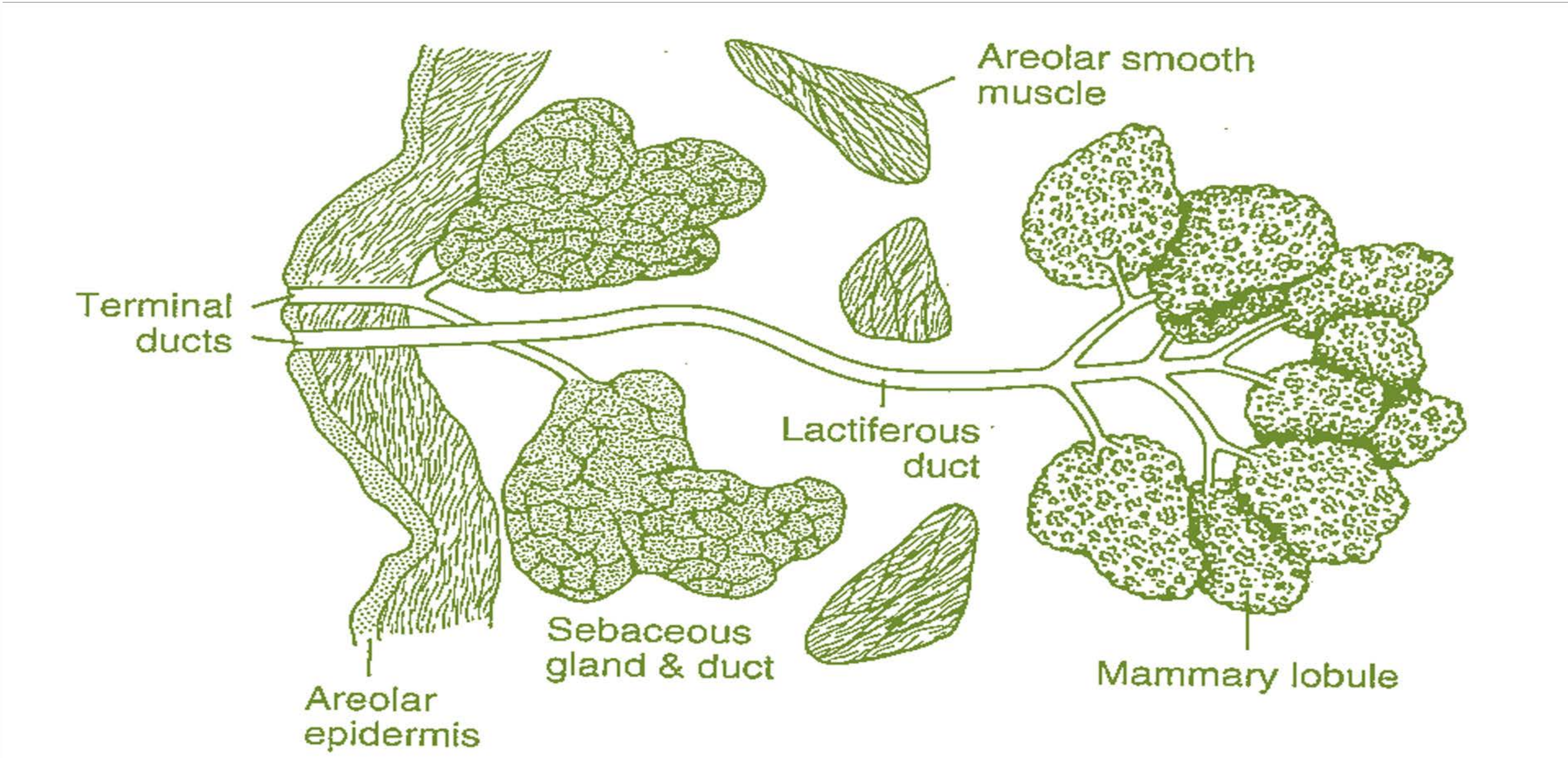


- Denise Both & Kerri Frischknecht, Breastfeeding: An Illustrated Guide to Diagnosis and Treatment © Elsevier 2008

Montgomery follicle swellings



Montgomery follicle



Lawrence RA, Lawrence RM (eds) 2005. *Breastfeeding, A Guide for the Medical Profession* 6th Ed., Mosby Philadelphia, Pennsylvania

Nipple polyp

Nipple polyp/skin tag/squamous papilloma

- May increase in size in pregnancy and lactation
- May cause breastfeeding latch issues
- Can be excised with local anaesthetic during pregnancy (if large or bothersome)

Nipple vasospasm

Cause:
-constriction of blood vessels supplying the nipple
-episodic vasoconstriction of arterioles (blanching) followed by cyanosis as deoxygenated venous blood predominates (blue/purple), then reflex vasodilation (pink)

Possible contributing factors:
Preexisting poor peripheral circulation eg Raynauds
Hormonal, emotional, physiological changes of pregnancy/birth
Mechanical forces of breastfeeding infant

Signs and symptoms:
- Burning, throbbing pain in nipple and breasts
- Nipples change colour to white, blue/purple, pink
- Exacerbated by cold exposure
- May occur after nipple damage

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Nipple vasospasm

Reports of nipple vasospasm[1]

- Wk 1 14%
- Wk 4 23%
- Wk 8 22%
- Higher pain scores than those women without vasospasm
- None had taken medication for their vasospasm

Nipple vasospasm

Management:

- Keep warm, avoid airing nipples
- Optimise latching
- Keep breasts and nipples warm eg heat pack
- Magnesium, Calcium, Fish oil or evening primrose oil
- Stop smoking and caffeine
- If not improved consider, Calcium channel blocker
  eg Nifedipine 30mg slow-release tab daily
- Potential medication side effects – headache, flushing, ankle swelling, dizziness

Nipple candidiasis

- Infection of nipples caused by *Candida albicans*
- nipple/areola skin rash (uncommon)

- Symptoms: sensitive nipples; burning, itching, stinging of nipples;
- Signs: nipples may be pink, inflamed, shiny, rarely white exudate (DDx nipple dermatitis)

Baby :

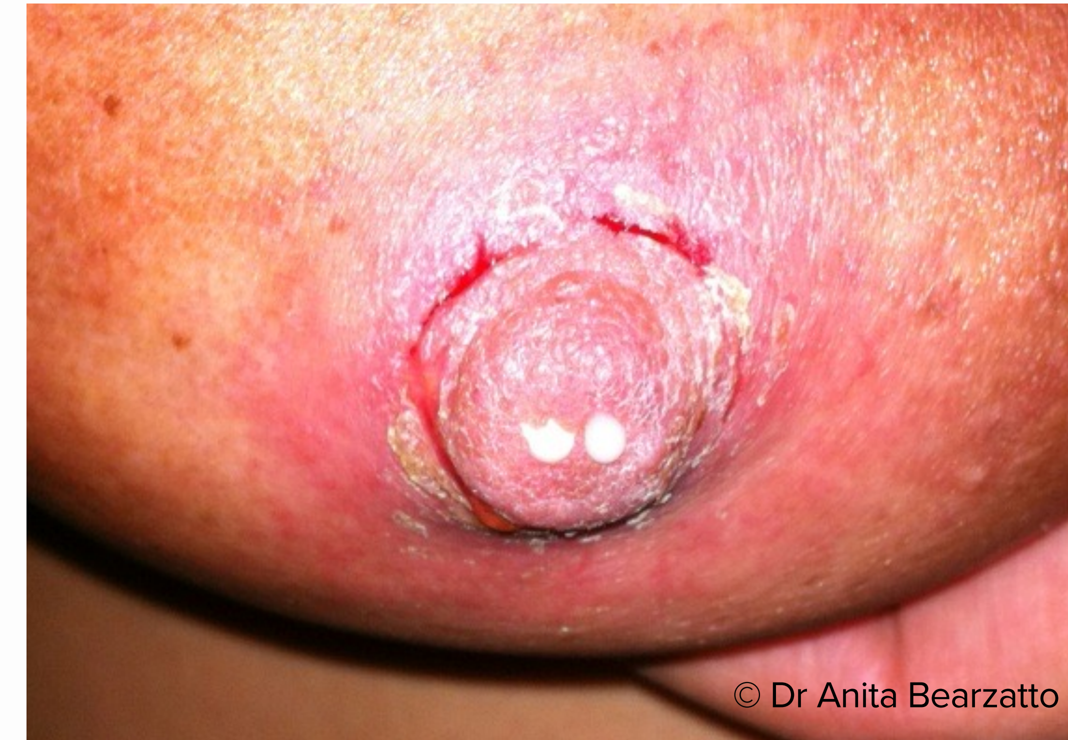
- may have oral candidiasis or
- rash in nappy area typical of candidiasis (red spots, satellite lesions' extending to thigh/vulva/scrotum)

Management:
Treat mother and baby

Mother : Miconazole oral gel or cream applied to nipples 4x/day +/- oral antifungal tabs eg Nystatin or Fluconazole

Baby: Miconazole oral gel (or Nystatin drops) into baby's mouth (discuss safe administration)
week 1 4 x/day, Week 2 once daily

Nipple dermatitis



- Dry, red, scaly, well demarcated, itchy rash on nipple and areola
- May cause pain with breastfeeding
- May develop superficial cracks
- Secondary bacterial infection can develop due to cracks and loss of skin integrity

Nipple dermatitis

Cause in breastfeeding is usually contact dermatitis

- **Irritant contact dermatitis**: irritation of the skin by products eg creams, soaps, breast pads, pump

- **Allergic contact dermatitis**: delayed hypersensitivity (after hours) to an allergen in a product used on the skin
- Examples: ingredient in topical agent eg preservative, topical medication eg antibiotic, botanical eg tea tree oil or metal eg nickel

- **Atopic dermatitis** can also be a cause (usually have pre-existing atopic dermatitis, may occur when not breastfeeding)

- DDx Nipple psoriasis (similar treatment usually), nipple candidiasis

Nipple dermatitis

Management:

- Avoid triggers if identified
- Moisturise (eg Lanolin ointment or Sorbolene cream)
- Topical steroid (eg Mometasone furoate, Methylprednisolone aceponate)
- If infected add Mupirocin ointment

Response to treatment is usually rapid

Nipple psoriasis

- Uncommon
- May involve nipple, areola or breast
- Skin inflammation
- Grey/silver scale

Management:

- Topical steroids
- UV phototherapy
- Immunomodulators
- Biologic agents (some medication CI with breastfeeding)

Nipple hyperkeratosis

- Warty, pigmented thickening of nipple and areola
- Usually bilateral
- Generally asymptomatic, occasionally itchy
- Breastfeeding is possible but difficulties may occur
- Latching and pumping may cause skin shedding with sensitivity of underlying raw skin

Management:

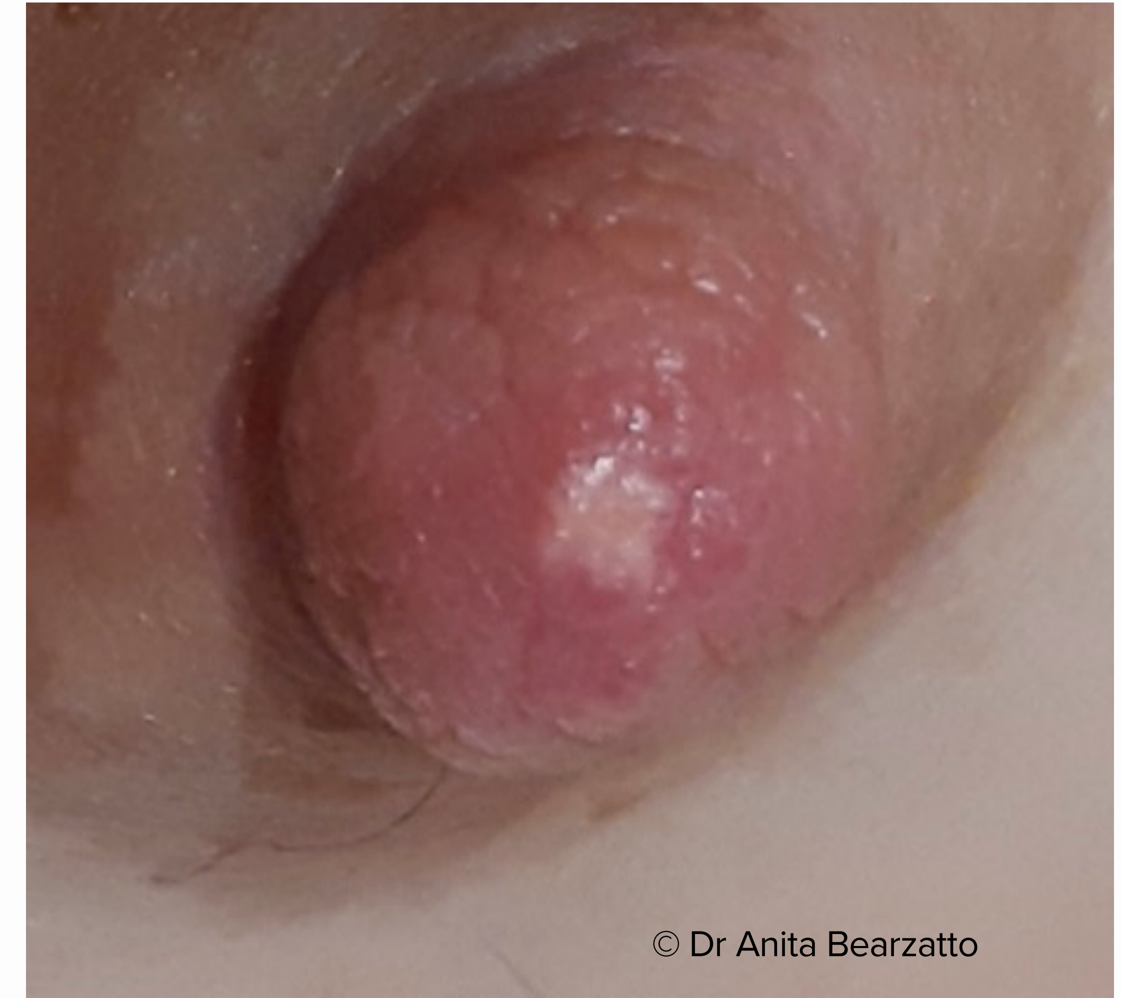
- Keratolytic moisturizer (urea, lactic acid)
- Others – cryotherapy, topical steroids, laser

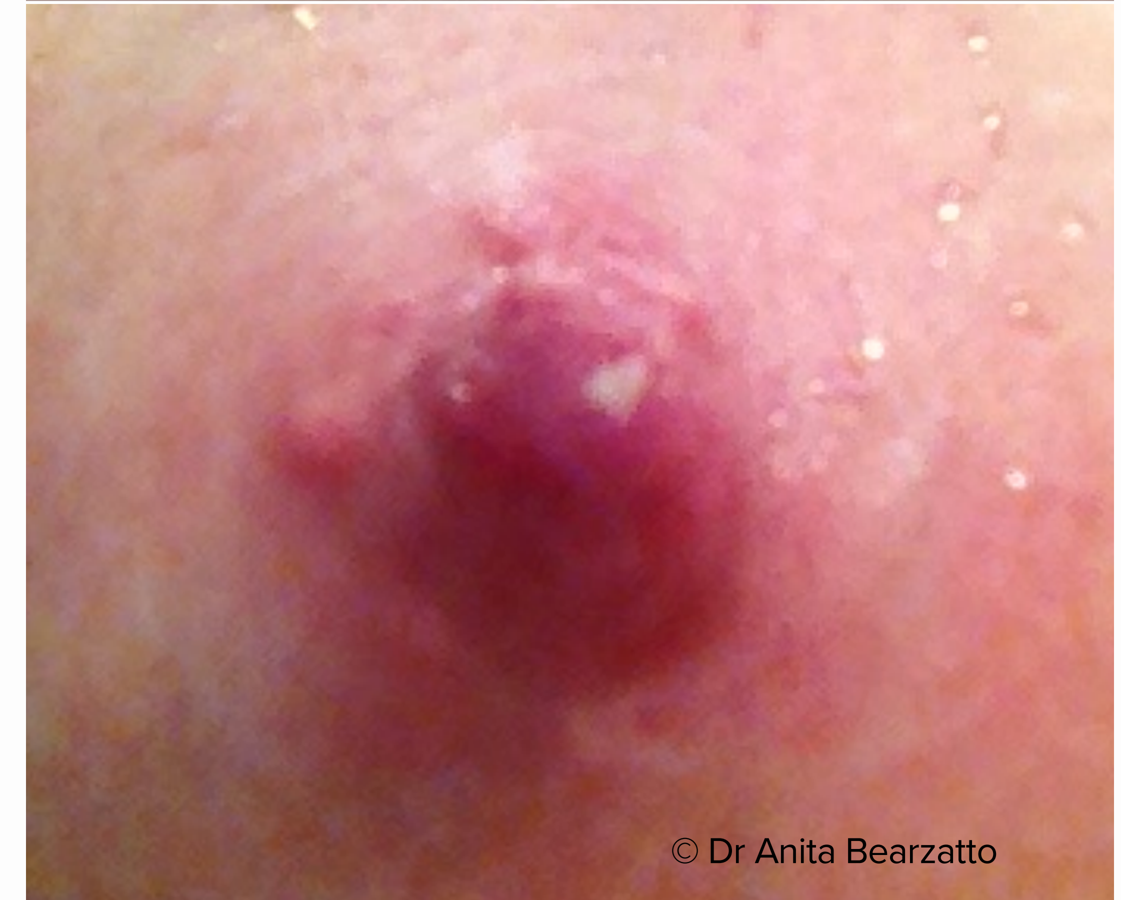
Nipple white spot(bleb)

Milk blister/bleb/white spot

- Inflammatory lesion in duct opening
- Potential for causing blockage of milk duct
- May be acute or chronic

Potential theories:
- Inflammatory reaction to mechanical trauma
- Skin layer blocking duct
- Inflammation due to milk in nipple pore with overlying skin
- Pressure cyst from milk seeping into the elastic tissue
- Hyperlactation
- Fattier/thickened milk
- Mammary dysbiosis (altered microbiome in breast)





Nipple white spot(bleb)

Symptoms:

- White spot on nipple tip

+/- blockages in breast

- Commonly causes pain on latching/during breastfeeding at site of spot

Nipple white spot(bleb)

Management:

- Optimise position and latch
- Manage hyperlactation if present
- Correct any sizing issues with shield or pump
- No evidence for specific treatments

Options:

- Warm compress, olive oil application
- Gentle rubbing of area with wet face washer
- Topical steroid creams
- ?Needle insertion (deroofing) by medical practitioner preferably with lactation medicine experience
- ?lecithin ?probiotics

Nipple white spot(bleb)

Differential diagnoses:

- Friction blister (clear or red/brown blister)
- Callus (Hyperkeratosis) - likely due to mechanical microtrauma
- Milium – small dermal cyst

Herpes infection

Cause:

- Infection of skin on nipple or areola by Herpes Simplex Virus (HSV) 1 or 2
- Acquired by direct skin contact with the virus

Signs & symptoms:

- Painful vesicles, flat sores, often multiple
- Usually single sided
- Atypical, persistent nipple pain

Herpes infection

Transmission:

- **breastfeeding** – transmission to mother from (usually older) breastfed infant with primary herpes gingivostomatitis (can be mild or asymptomatic)
- **sexual contact** (oral to nipple contact from partner with labial herpes)
- **autoinoculation** (from patients own oral or genital herpes)
- **reactivation** of past HSV nipple lesion (esp after nipple trauma)

***Risk if breastfeeding a neonate – disseminated neonatal herpes (high mortality)

Herpes infection

Management:

- Take viral swab if suspected
- Cease infant contact with the breast while lesions present
- Express from affected side and discard milk until lesions fully healed
- May continue to breastfeed from unaffected side
- Cover active lesions
- Antiviral medication for mother (eg oral acyclovir)
- Good hygiene

Pump trauma

Contributing factors:

- Incorrect size
- Strong vacuum
- Frequent pumping
- Prolonged pumping

Management:

- Assist with sizing
- May need to try a size bigger/smaller
- Option lanolin (or similar) application to nipple prepump to reduce friction
- Breast pump cushions
- Resting if needed, nonelectric pump, hand expressing

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Summary

- Nipple conditions are common in breastfeeding medicine consultations
- For those supporting lactation patients, it is important to understand the management of common and rarer nipple conditions
- Ongoing medical and psychological support can lead to better outcomes for patients

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