

Breastfeeding and sore nipples

As more and more mothers choose to breastfeed their babies, the family physician must be prepared to recognize and manage common problems that may arise.

Verity Livingstone

This article will help you to:

- identify the underlying causes of sore nipples in the breastfeeding mother
- correct faulty breastfeeding techniques
- differentiate nipple candidiasis and impetigo vulgaris
- manage Raynaud's of the nipple using a standard dermatological approach

Practice Point

- Increasing or persistent nipple pain, excoriations, dermatitis, or ulceration are pathological and need dermatological evaluation.
- It is inappropriate to try to mask the pain by numbing with ice or using strong pain killers or nipple shields.
- Gum compression or tongue friction, due to inappropriate latch, can cause bruising and nipple pain.
- Local erythema, excoriations, ulcers and purulent exudates around the nipple may be signs of impetigo vulgaris.

For many years, medical and nursing literature has recommended a variety of management approaches for sore nipples. These have ranged from topical application of cold tea bags, carrots and vitamin E, to pure lanolin, masse cream, antiseptics, alcohol preparations, ice and air drying. Whether each of these modalities is effective has not been proven. Air drying is now thought to be detrimental because it removes water from the skin and precipitates proteins, leaving the skin less pliable and more prone to fissuring. Health care professionals are cautioned against the use of nontraditional adjunct managements for sore nipples. To correctly diagnose and manage sore nipples requires a standard dermatological approach.

Approximately 80% of breastfeeding mothers experience the common symptom of sore nipples, particularly during the first few days of breastfeeding. This transitory nipple soreness is usually accepted as normal but a small percentage of women have naturally hypersensitive nipples that remain uncomfortable as long as they breastfeed, despite careful technique. These women have highly sensitive nipples even in the nonlactating state. Factors such as frequency and duration of breastfeeding, skin or hair color, and nipple preparation do not seem to make a difference in preventing tenderness.

Increasing or persistent nipple pain, excoriations, dermatitis, or ulceration are pathological and require careful dermatological evaluation. A detailed maternal and infant history and physical, followed by observation of breastfeeding are needed to pinpoint the cause.



Correcting the position and latch can
instantaneously remove pain and discomfort

Bruised nipples

In order to suckle correctly, an infant must grasp sufficient breast tissue to form a teat, and draw it to the back of the pharynx. Rhythmic jaw compression and a grooved, undulating tongue initiates coordinated suckling. Detailed studies have illustrated how gum compression or tongue friction, due to inappropriate latch, can traumatize the skin and cause bruising and pain. Postpartum breast engorgement often temporarily reduces the graspability of the nipple and impedes latching. Maternal nipple and infant oral anatomical anomalies can also interfere with effective latch and suckle. Clinical findings such as maternal inelastic, flat, pseudoinverted or inverted nipples, and infant cleft lip and palate are easily identified; more subtle findings may include infant retrognathia and ankyloglossia.

Managing bruised nipples

- Correct position and latch. This can have a dramatic effect and instantaneously remove the pain and discomfort.
- Supporting and shaping the breast throughout the feed maintains correct latch.
- Continuous support of the infant's head and shoulders stabilizes the neck and jaw muscles.
- A semi-upright breastfeeding position allows gravity to aid in jaw extension and minimizes overbite and gumming.
- Perform a frenotomy, to release a tongue tie, (Figure 1), if this is clinically indicated.



Figure 1 Tongue tie causes nipple trauma.

In most situations, breastfeeding should continue. However, if repositioning fails to modify or relieve the pain and discomfort, breastfeeding should be interrupted for 48 to 72 hours to allow healing to occur. The breasts should be drained every three to four hours, and an alternate feeding method used. A wide-based rubber nipple encourages an effective sucking mechanism and does not cause so-called "nipple confusion."

Do not try to mask the pain by suggesting ice, strong pain killers or nipple shields since they don't correct the underlying cause and may lead to further nipple trauma. Over a period of a few weeks, a hypoplastic mandible rapidly elongates and the facial muscles strengthen, the nipple tissue becomes more distensible, the latch improves, and nipple trauma and pain resolve.

Chapped nipples

Dry, cracked nipples may be chapped due to loss of the moisture barrier in the stratum corneum that results from the constant wet and dry exposure combined with nipple friction.

Managing chapped nipples:

- Avoid further trauma by modifying breastfeeding technique
- Avoid excessive drying
- Restore the moisture barrier.

Moist wound healing allows the epithelium cells to migrate inwards and heal the cracks and ulcers. Moisturizers and emollients such as USP modified anhydrous lanolin applied to the nipples and areola after each feed are cheap and effective. A mild corticosteroid ointment may help to decrease the inflammation.

Impetigo of the nipple

The skin's natural barriers (i.e. the stratum corneum), rapid cell turnover, an acid pH of 5 to 6 and the skin's normal dryness usually prevent infection. When there is a break in the integument in any skin surface, a secondary infection can occur due to bacterial or fungal contamination. These infections may lead to a delay in wound healing. Sore nipples associated with skin breakage (cracks, fissures, and ulceration) have a high risk of being contaminated with microorganisms. The clinical findings of local erythema, excoriations, ulcers or purulent exudates, and tenderness around the nipple and areola suggest impetigo vulgaris (Figure 2) due to coagulase-positive *Staphylococcus aureus*, and group A beta-hemolytic *Streptococcus*. Most cases of cellulitis, mastitis, and breast abscess involve an ascending lactiferous duct infection secondary to impetigo on the nipple. In some clinical situations, a blocked nipple pore appears white due to colonization by *S. aureus*.



Figure 2 Impetigo on the nipple



Figure 3 Candida dermatitis on nipple

Management of impetigo of the nipple Consider impetigo of the nipple as a widespread or deep infection. Standard treatment includes:

- careful washing of the nipples with soap and water to remove crusting
- systemic penicillinase-resistant antibiotics such as floxacillin 500 mg q6h for 10 days, dicloxacillin, a cephalosporin, or erythromycin. Continue treatment for 10 days or until the skin is fully healed.
- topical antibiotic ointments, i.e. 2% mupirocin (Bactroban) may be effective for superficial infections.

Although these systemic antibiotics may cross into the breast milk in small quantities, they do not have harmful effects on the newborn. There are, however, some antibiotics which can cause gastrointestinal irritation in the baby.

The source of the infection is often the infant's oropharyngeal or ophthalmic flora. In persistent or recurrent infections, it may be necessary to treat the infant as well.

Candidiasis of the nipple

Although normal skin does not harbor *Candida albicans*, almost any skin damage caused by trauma or environmental changes may lead to its rapid colonization (Figure 3). Suspect candidiasis when there are persistent nipple symptoms such as:

- a burning sensation on light touch
- severe nipple pain during feeds
- minimal objective findings on the nipple

- a superficial erythema on the nipple and areola
- a dry, flaky dermatitis with clear demarcated edges over the areola.

If the mother has candidal vulvovaginitis during a vaginal delivery; there is a high incidence of oral mucocutaneous candidiasis in the newborn. Clinical examination of the infant is mandatory. *C. albicans* is passed from the infant's oral pharynx to the mother's nipple. The warm, moist, frequently macerated nipple epidermis is easily colonized and infected when the integument is broken. In the presence of characteristic and chronic nipple pain and dermatitis, culture the nipples, or directly observe skin scrapings microscopically to see if there is a fungal infection.

The steps for managing a mother and child with candidiasis are outlined in Table 1.

Table 1

Managing candidiasis in the mother and infant

THE MOTHER

- Careful hygiene, removal of excessive moisture
- Topical therapy with broad spectrum antifungal agents such as clotrimazole, miconazole or 2% ketoconazole
- Treat infant oral thrush
- Gentian violet 0.5% aqueous solution: paint nipples daily for five to seven days
- Systemic antifungal agents for resistant cases
- Avoid reinfection

THE INFANT WITH ORAL CANDIDIASIS

- Miconazole in oral gel (20 mg/g) q.i.d. pc feeds for seven to ten days
- Nystatin suspension 100,000 U/g; paint oral cavity carefully then give 0.5 mL p.c. each feed for ten to 14 days.
- Gentian violet 0.5% aqueous solution 1 mL (20 mg/mL) t.i.d. for seven days
- Ketoconazole oral suspension 1 mL (20 mg/mL) t.i.d. for seven days
- Fluconazole oral suspension 3 mg/kg/day o.d. for five to seven days
- Eradicate maternal candidiasis

For the mother: Apply creams to the nipple and areola before and after each breastfeed for 10 to 14 days. Resistant cases may require systemic antifungal therapy using ketoconazole or fluconazole. Treat other sites of candidiasis, including maternal vulvovaginitis, intertrigo, or infant diaper dermatitis, simultaneously with a topical antifungal cream to prevent reinfection.

For the infant: Treat oral candidiasis first with nonabsorbable or limited gastrointestinal absorbable drugs (such as miconazole and nystatin). Reserve drugs which exert both local and systemic effects for resistant cases (such as ketoconazole, itraconazole and fluconazole). In general, side-effects and toxicity are not major concerns with nonabsorbable or absorbable antifungals in children with oral candidiasis, since treatment is usually short. Treatment should continue for about two days after resolution of symptoms and signs. Excessive use of gentian violet solution may cause oral ulceration and should be used under medical supervision. Topical corticosteroids may reduce nipple pruritis and erythema.

Failure to eradicate fungal infections is usually due to patient, not medication, failure. Sometimes more serious underlying medical conditions such as diabetes or immunodeficiencies may exist. Avoid or sterilize foreign objects contaminated with yeast, including soothers and rubber nipples, if possible, to prevent reinfection.

Contact dermatitis

Dermatitis of the nipple is an eczematous reaction to an external material applied, worn, or inadvertently transferred to the skin. It may be an allergic or an irritant response. Patients may complain of dry, pruritic, or burning nipples with signs of inflammation, erythema, and edema or excoriations, desquamation, or chronic plaque formation.

Managing contact dermatitis

- The mother should avoid all irritants such as creams, preservatives, detergents, and fragrances.

- Topical nonfluorinated steroid ointments and emollients applied thinly to the nipple and areola after each feed are effective.
- Chronic dermatitis is often positive for *S. aureus* which may need oral antibiotic therapy.

Vasospasm or Raynaud's phenomenon of the nipple

Vasospasm of the nipple presents as a blanching of the nipple tip with severe pain and discomfort radiating through the breast after feeds and between feeds. It is often associated with excoriated and infected nipples. There may be a concomitant history of cold-induced vasospasm of the fingers (Raynaud's phenomenon) or an underlying connective tissue disorder. Repetitive trauma to the nipple due to incorrect latch or overbite associated with retrognathia, combined with local inflammation or infection and air cooling, trigger a characteristic painful vasospastic response. Management is often frustrating because resolution is slow.

Managing vasospasm or Raynaud's phenomenon:

- Prevent ongoing nipple trauma by correcting the latch
- Use alternating breastfeeding positions during the feed
- Apply dry warmth to the nipples after feeds
- Treat local infections aggressively
- Avoid smoking and caffeine
- Consider nifedipine 5 mg t.i.d.
- Reassure the patient and remind her that resolution can take time.

Temporary cessation of breastfeeding for several days may be required in order to allow healing to occur. Vasospasms slowly resolve when the underlying precipitating factors are removed and the repetitive nipple trauma is reduced. Retrognathia diminishes over weeks.

Psoriasis of the nipple

Psoriasis presents as a pink, flaky plaque over the areola as a result of skin trauma. There is usually an existing psoriatic history. Standard treatment includes fluorinated steroid ointments and keratolytic agents. Apply them after feeds and wash off carefully before feeds. Avoid repetitive nipple trauma.

Proprietary drugs

Clotrimazole

Canestan

Myclo

Erythromycin

Many proprietary names

Floxacin sodium

Fluclox

Fluconazole

Diflucan

Itraconazole

Sporanox

Ketoconazole

Nizoral

Miconazole nitrate

Micatin

Monistat

Mupirocin

Bactroban

Nifedipine

Adalat

Adalat PA 10

Adalat PA 20

Nystatin

Mycostatin

Nilstat

Further Reading

Lawrence RA. *Breastfeeding: A Guide for the Medical Profession*, 4th ed. St. Louis, CV Mosby Co, 1994.

The Art of Successful Breastfeeding: an educational video for health professionals. By Dr V. Livingstone and B. Miller. 1995. Available from the Vancouver Breastfeeding Centre, 690 W 11th Avenue, Vancouver, BC, V5Z 1 M1 Orders by FAX, call (604) 875-5017.

Verity Livingstone MB BS FCFP IBCLC is Medical Direct; of the Vancouver Breastfeeding Centre and an Associate Professor in the Department of Family Practice at the University of British Columbia. She received her medical degree in London, England in 1974 and did postgraduate training in pediatrics. She is a family physician and an International Board Certified Lactation Consultant and is a member of the Breastfeeding Committee for Canada. She was the first recipient of the Family Physician Practice of Excellence award for her work in breastfeeding promotion and has recently produced a video titled The Art of Successful Breastfeeding — a Guide to Health Professionals.