BREASTFEEDING PROTOCOL #6:

Plugged Ducts

Toronto Public Health

Background

In 2018, a partnership was formed with the Baby-Friendly Initiative (BFI) Strategy for Ontario and Toronto East Health Network (TEHN) to update and revise the Breastfeeding (BF) Protocols for Health Care Providers to create a current and evidence informed resource. With the support of partner organizations and service providers, five BF Protocols were revised and released in 2019 and early 2020. This project was then paused due to the COVID-19 Pandemic.

In 2024, TPH resumed work on the protocols independently with acknowledgement from TEHN. TPH has reviewed and updated protocol content and references based on current breastfeeding resource information. Resources used in this review include Government references, breastfeeding texts, medication use during lactation guides and websites, and recognized organizations such as Academy of Breastfeeding Medicine and La Leche League.

Use of this Protocol

This Protocol is intended to support evidence-informed clinical practice. This Protocol may be copied or printed for the purpose of educating health care professionals, provided the authors are acknowledged and content is not altered, nor used or reproduced for commercial gains.

Disclaimer

This Protocol is a guideline. Every breastfeeding dyad and their circumstances must be assessed on an individual basis. In doing so, health care providers use their own professional judgement along with the evidence in assessing the care and support that the family needs. At times, consultation with another breastfeeding expert or advice from a medical practitioner, e.g., physician, midwife, or nurse practitioner, will be required.

Acknowledgements

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A plugged duct often appears as a localized area of glandular distension and ductal inflammation, where narrowing leads to lymphatic congestion, slowing milk flow due to the congestion, and presents as a palpable lump. The lump can be tender and painful to touch but generally lacks systemic signs of infection, such as fever or redness.
(Spencer, Campbell, & Chamberlain, 2022)

Observation and Assessment

Assess the breastfeeding parent for:

- Unilateral symptoms, localized in one area of the breastfeeding parent's breast.
- Mild tenderness, little or no heat, possible redness of one area of the breast.
- If the plugged duct is close to the skin, there may be a palpable lump in one area of the breast.
- Possible white dot or bleb at the end of the nipple.
- Body temperature < 38.4°C (101°F).
- Gradual onset of symptoms.
- Feeling well otherwise.

Source: Adapted from Spencer, Campbell, and Chamberlain 2022, Lawrence 2022, Mohrbacher, 2020 & Wambach 2021.

Possible Contributing Factors or Causes

Plugged ducts may be the breastfeeding parent and/or infant related.

Assess the breastfeeding parent for:

- Positioning and latching difficulties.
- Hyperlactation and/or ductal inflammation and congestion. Breastfeeding parents with an abundant breast milk production may be at greater risk of plugged ducts.
- Overstimulation of breasts and/or incorrect use of breast pump.
- Ineffective removal of breast milk and inadequate drainage of the breast.
- Use of nipple shields, and/or breast shells. Infants may not latch correctly and drink passively with the use of nipple shields, leading to ineffective breast milk removal. Breast shells may increase the risk of plugged ducts due to consistent pressure, leading to restricted breast milk flow. (ABM Protocol #36, 2022, Lawrence, 2021; Mohrbacher, 2020)
- Restricting the frequency and length of breastfeeding.

- Temporarily stopping breastfeeding without expressing for the missed breastfeeds, including separation of the breastfeeding parent and infant.
- Engorgement *(Protocol #5: Engorgement)*.
- Overabundant breast milk supply *(Protocol #13: Overabundant Breast Milk Supply/Forceful Letdown or Breast Milk Ejection Reflex)*.
- External pressure on a specific area of the breast:
  - Breastfeeding parent's finger pressing on their breast throughout the feed
  - Constrictive bra or clothing
  - Straps on an infant carrier
  - Always sleeping on the same side
  - Always holding the infant, the same way.
- Stress.
- Fatigue.
- History of breast trauma or surgery.

(*Source:* Adapted from Lauwers & Swisher, 2021, Lawrence, 2021, Mohrbacher, 2020).

Assess the infant for:

- An ineffective suck *(Protocol #10: Ineffective Suck)*.
- Infrequent, hurried, shortened, or missed breastfeedings, including when the infant is ill.
- Weaning.

Suggestions

1. Assess for possible contributing factors or cause(s) of the plugged ducts.

- If the breastfeeding parent's breasts are engorged, refer to *Protocol #5: Engorgement*.
- If the breastfeeding parent has an overabundant breast milk supply, refer to *Protocol #13: Overabundant Breast Milk Supply/Forceful Letdown or Breast Milk Ejection Reflex*.

2. Provide the breastfeeding parent with suggestions for self-care.

- Rest as much as possible.
- Eat and drink according to Eating Well with Canada's Food Guide (Health Canada, 2019).
- Support for the family and help with other children.

3. Provide the breastfeeding parent with suggestions for breastfeeding with plugged ducts.

- Understand that most plugged or blocked ducts will resolve in 1–2 days.
- Follow the infant's early feeding cues, e.g., rapid eye movements under the eyelids, sucking/licking, hands to mouth, increased body movements, and making small sounds.
- Breastfeed effectively, at least 8 times in 24 hours, including once overnight, to mimic the normal breastfeeding pattern, until the plugged duct is cleared. The breastfeeding parent should be encouraged

to breastfeed before the infant is overly hungry and crying *(Protocol #3: Signs of Effective Breastfeeding)*.

- Avoid missed or shortened breastfeeding. Express the breast if breastfeedings are missed or shortened.
- Minimize use of breast pumps as it may worsen trauma with inflammation and swelling due to incorrect use, improper flange sizes, setting the pump suction too high, or pumping for an excessive duration and/or frequency.
- Avoid overstimulation of breasts, the use of wearable pumps (e.g., Hakka, Momcozy) to collect excess breast milk, and unnecessary pumping.
- If possible, avoid the use of nipple shields to decrease risk of ineffective breast milk removal.
- Apply cold compresses/packs to assist in reducing inflammation, pain, and relieve congestion. Wrap any cold packs in a cloth to protect the skin.
- Avoid the use of heat on edematous, blocked, swollen, or inflamed breasts. It can make swelling worse.
- Try Reverse Pressure Softening (RPS**)** if breast is engorged or areola is swollen (see Other Supportive Measures).
- Consider gentle Lymphatic Drainage. This technique that can be used as appropriate to reduce swelling by assisting with the movement of lymphatic fluid and decreasing edema (see Other Supportive Measures).

During breastfeeding, encourage the breastfeeding parent to:

- Offer the affected side first at each breastfeeding to ensure strong sucking and drainage of the plugged duct.
- Avoid prolonged finger or hand pressure on the breast. Gentle breast compression can be used intermittently to support breastmilk flow.
- Use correct positioning to achieve a deep latch.
- Rotate breastfeeding positions during feedings to promote drainage of all the ducts in the breast. Assess that the infant is effectively positioned and latched *(Protocol #2: Positioning and Latching)*.
- Assess that the infant is effectively sucking and swallowing throughout each breastfeeding *(Protocol #3: Signs of Effective Breastfeeding)*.
- Avoid squeezing the plug, applying deep pressure, or aggressively massaging the breast as this can result in more swelling, breast congestion, tissue trauma and increased inflammation. (ABM Protocol #36, 2022).
- Avoid the use of electric toothbrushes and other commercial vibrating or massaging devices as they can increase the risk of bruising, swelling, and tissue damage. (ABM Protocol #36, 2022).

Between breastfeedings, encourage the breastfeeding parent to:

- Follow self-care practices – try to rest as much as possible, eat a healthy diet, and seek support to minimize stress.
- Avoid placing prolonged pressure on the breasts, e.g., from breast shells, restrictive clothing, tight or underwire bras, straps on an infant carrier, always sleeping on one side, or always holding the infant the same way.

- Monitor for signs of mastitis, e.g., changes in body temperature, breast pain, and breast redness *(Protocol #7: Mastitis)*.
- Apply ice/cold compresses to help reduce inflammation, pain, and relieve congestion between feedings. Wrap any cold packs in a cloth to protect the skin.
- Ice/cold compresses can be applied every hour or more frequently if desired (limit cold exposure to 10-20 minutes several times a day)

Pain management:

- If the breastfeeding parent is in pain, encourage them to discuss with their healthcare provider about pain medication compatible with breastfeeding (LI category), such as ibuprofen, nonsteroidal anti-inflammatory analgesic (NSAID) that may also help reduce tissue swelling more quickly or acetaminophen, an analgesic/antipyretic used in the treatment of fever and pain. (Mohrbacher 2020 & Hale 2023)

If the infant is unable to breastfeed effectively, encourage the breastfeeding parent to:

- Gently express each breast when the infant is unable to latch and breastfeed effectively. If breastfeeding is stopped for any length of time the breastfeeding parent will need to express each breast at least 8 times in 24 hours, including overnight, until the plugged duct has cleared.
- Only express the amount of breast milk that the infant requires, to assist with regulating breast milk production. Expressing too much can increase swelling and discomfort.
- Breastfeed the infant with the expressed breast milk using an alternative method, e.g., cup, spoon, or finger feeding *(Protocol #17: Indications for Supplementation or Cessation of Breastfeeding).*
- Consult a breastfeeding expert or attend a breastfeeding clinic for further assessment and support as soon as possible.

Recurrent plugged ducts:

- Review possible contributing factors.
- If plugged ducts are not resolving, further assessment by a physician is required.
- Recurrent plugged ducts or unresolved breast masses should be further evaluated. Breast cancer in young women and nursing parents is increasing in frequency. If a breast mass does not resolve within 72 hours, the breastfeeding parent should be referred to their healthcare provider to determine if the mass is benign.
- A referral to a primary healthcare provider is especially important if:
  - Plugged ducts or mastitis repeatedly occur in the same area of the breast.
  - A breast mass does not decrease after 72 hours of optimized breastfeeding management. (Lawrence, 2021).

Lecithin:

- Some practitioners or breastfeeding experts may recommend the use of lecithin, either from dietary sources or as a supplement.
- Lecithin is present naturally in breast human milk and living tissues. It also occurs in the body as an emulsifier for bile salts, and helps to emulsify fats, making them easier to digest. Lecithin is found

in many foods, and often used as an additive or in food preparation (Hale, 2023). A Registered Dietitian can suggest dietary sources of lecithin. Dietetic texts however do not make specific recommendations of lecithin for breastfeeding parents.

- The use of lecithin is suggested in many texts (Lauwers, 2021; Wambach, Spencer, 2021; Spencer, Campbell, Chamberlain, 2022) and continues to be referenced by Dr. Ruth Lawrence (Lawrence, 2021). No clinical research could be found related to the use of lecithin for plugged ducts and there is no sufficient evidence to determine recommendations of efficacy, dosages, side effects, or risks for either the breastfeeding parent or infant.
- Although there are no scientifically established dosages for the use of lecithin in breastfeeding, it has been suggested by some breastfeeding experts that sunflower or soy lecithin may help resolve recurrent plugged ducts if the breastfeeding parent takes lecithin either in their diet or as a supplement.
- The below dosage information is cited in the following lactation texts:
  - Sunflower lecithin 5-10 gms daily (Spencer, Campbell, Chamberlain, 2022)
  - 1 tablespoon three to four times daily or 1–2 capsules (1200 mg) 3 – 4 times daily (Lauwers, 2021).
- Breastfeeding parents should approach the use of natural health products with caution and always consult a qualified health care provider *(Protocol #16: Drugs and Breastfeeding)* for further discussion of natural product use.
- There are clinical observation reports of the successful use of lecithin for plugged ducts, with no apparent side effects, however there is not enough scientific information about the safety of various supplements and natural products to recommend their general use during breastfeeding.
- Breastfeeding parents can speak with their Health Care Provider or a Registered Dietitian to discuss dietary sources of lecithin or any other changes in diet, such as reducing saturated fat.

Nipple Blebs/Milk Bleb/Milk blisters

- Nipple blebs can occur with plugged ducts and often present as a white or yellowish dot, bump or tiny breast milk filled blister on the tip of the nipple, blocking breast milk flow.
- Occasionally blisters on the nipple can be the result of trauma and not plugged ducts. Latch and positioning should be assessed.
- Blebs often result from ductal inflammation and accumulation of breast milk solids that block the breast milk from flowing. It may be painful to touch and when the infant latches.
- The bleb often becomes unblocked with effective breastfeeding.
- Avoid opening the bleb with a needle as this can cause further trauma and swelling, increasing the risk of infection and recurrent blebs.
- If the bleb is not resolving, client should follow up with their health care provider for further medical management. Oral lecithin and topical steroid cream may assist in reducing inflammation.

General Principles

- Optimize latch and positioning to ensure effective breast milk removal.
- Minimize unnecessary pumping.
- Effective management of plugged ducts involves reducing inflammation and congestion in the breast.
- Cold compresses between feeds can help reduce inflammation, pain, and relieve congestion.

- Most plugged ducts and inflammation will resolve within 1-2 days with effective management and breast milk removal.
- Support maternal self-care, i.e., rest and diet according to Eating Well with Canada's Food Guide (Health Canada, 2019).
- Plugged ducts can develop anywhere in the breast where lactiferous ducts are located, including the underarm area.
- If the plugged duct does not resolve within 72 hours, the parent should be referred for additional breast assessment to rule out other possible reasons for the lump. (Spencer, Campbell, and Chamberlain 2022)
- Antibiotic treatment is not recommended for the treatment of plugged ducts.
- Teach parents to monitor for a progression of symptoms that may indicate the development of mastitis. Mastitis is differentiated from plugged ducts by these symptoms: Fever of >38.4°C (101°F), flu-like symptoms, intense pain/redness in the breastfeeding parent's breast, and sudden onset of symptoms (Lawrence, 2021) (see also *Protocol #7: Mastitis*).

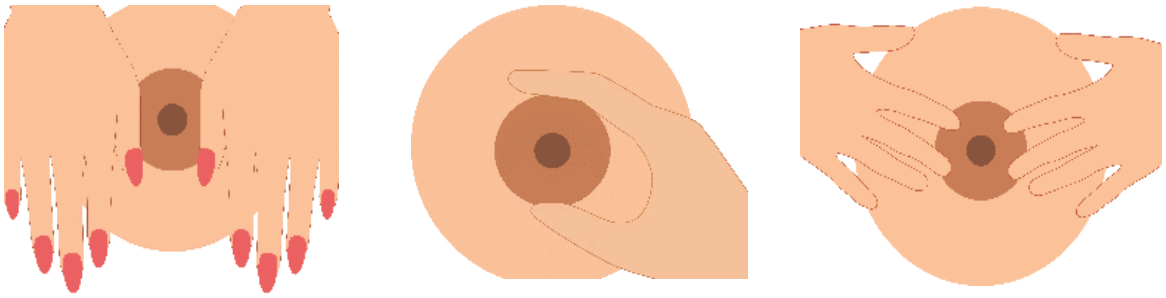
Other Supportive Measures

Other supportive measures may include the following:

Reverse Pressure Softening:

Reverse pressure softening may make it easier for infant to latch by pushing some of the swelling away from the nipple and areola.

- Place either fingers or fingertips around the base of the edematous nipple or areola to create a ring of dimples.
- Press gently into the breast holding the pressure for about 30-60 seconds. Move placement of hands on the areola and hold for another 30 to 60 seconds as needed.
- The gentle pressure applied around the nipple/areola will push the fluid back/upward into the breast and soften the areola to allow more effective latch.



Lymphatic drainage:

- Lymphatic drainage is a technique that can be used to reduce swelling by assisting with the movement of lymphatic fluid and decreasing edema in an engorged breast.
- To perform the technique, breastfeeding parents should use very gentle touch/traction of the skin (a light sweeping motion, like petting a cat) being careful not to press deeply into the tissue. The gentle traction will help lift the skin to allow flow of excess fluid.

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Technique:

- Make 10 small circles at the base of the neck, just above the clavicle.
- Make 10 small circles in the axilla.
- Continue with light touch sweeping motion as described above, from nipple towards the sternum, clavicle, and axilla.

Ultrasound:

Therapeutic ultrasound (TUS), a procedure performed by a trained physician or physiotherapist may be an effective treatment in reducing inflammatory conditions of the breast. TUS uses thermal energy to reduce inflammation and relieve swelling. If symptoms persist despite several days of treatment, additional investigations should be considered by the health care provider. (ABM Protocol #36, 2022)

A breastfeeding parent can safely continue breastfeeding while undergoing evaluation using ultrasound, mammography, and MRI. (Spencer, Campbell, Chamberlain, 2022).

References

Academy of Breastfeeding Medicine [ABM]. (2022). *Clinical Protocol #36: The Mastitis Spectrum* Academy of Breastfeeding Medicine. Electronic copy retrieved (2024) from: https://www.bfmed.org/assets/ABM%20Protocol%20%2336.pdf

Hale, T.W. (2023). *Hale's medications & mothers' milk* (20th ed.). Springer Publishing Company.

Health Canada (2019). *Eating Well with Canada's Food Guide*. Electronic copy retrieved (2024) from: https://food-guide.canada.ca/en/

Lauwers, J., Swisher, A. (2021). *Counseling the nursing mother: A lactation consultant's guide*. (7th ed.) Sudbury (MA): Jones & Bartlett, p. 255, 396–397.

Lawrence, R.A., Lawrence, R.M. (2021). *Breastfeeding: A guide for the medical profession*. (9th ed.) Philadelphia (PA): Elsevier Mosby:

Mitchell, K., Johnson, H., Rodríguez, J., Eglash, A., Scherzinger, C., Zakarija-Grkovic, I., Cash, K., Berens, P., & Miller, B. (2022). *Academy of Breastfeeding Medicine Clinical Protocol #36: The Mastitis Spectrum*. Retrieved 08 August 2024 from https://www.bfmed.org/assets/ABM%20Protocol%20%2336.pdf

Mohrbacher, N. (2020). *Breastfeeding Answers: a guide for helping families*. 2nd edition. Nancy Mohrbacher Solutions, Inc.

Spencer, B., Hetzel Campbell, S., & Chamberlain, K. (2022). *Core Curriculum for Interdisciplinary Lactation Care.* Jones & Bartlett Learning.

Wambach, K., & Spencer, B. (2021). *Breastfeeding and Human Lactation*. Jones & Bartlett Learning

Wilson-Clay, B., & Hoover, K. (2022). *The Breastfeeding Atlas*. LactNews Press.