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Parent Misidentification Leading to the Breastfeeding of the Wrong Baby in a Neonatal Intensive Care Unit

Authors' Contribution:
Study Design A
Data Collection B
Statistical Analysis C
Data Interpretation D
Manuscript Preparation E
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Patient: Male, 2 month
Final Diagnosis: 2 month old 32 weeks' gestational age preterm infant
Symptoms: Prematurity
Medication: —
Clinical Procedure: Accidental breastfeeding of the wrong baby
Specialty: Pediatrics and Neonatology

Objective: Diagnostic/therapeutic accidents

Background: Because there are clear benefits to breast milk over formula for infants, the goal of the World Health Organization is to increase breastfeeding rates. As more women are breastfeeding and providing breast milk to newborns in hospitals, there is increased risk for administration error.

Case Report: A hospitalized preterm infant was breastfed by the wrong mother when the Neonatal Intensive Care Unit Nurse failed to properly identify the mother. An infectious disease workup done on the donor mother was negative, but the recipient infant was positive for cytomegalovirus (CMV). Since the donor mother who accidentally breastfed the wrong infant was CMV-negative, the baby in our case had likely been exposed to CMV from his biological mother. The attending physician apologized to all of the family members involved, but the father of one infant continued to express anger.

Conclusions: To our knowledge, this is the first case of accidental breastfeeding in a hospital setting to be described in the literature. Parental misidentification and a language barrier led to the error. An infectious disease workup did not find any evidence of disease transmission from this event. Increased attention to minimize breast milk errors is needed. Despite a long history of wet nursing, unregulated breast milk sharing and cross nursing is not recommended. Instead, if a mother cannot provide breast milk herself, pasteurized donor breast milk from breast milk banks is encouraged.

MeSH Keywords: Breast Milk Expression • Infant, Newborn • Intensive Care, Neonatal • Milk, Human

Full-text PDF: http://www.amjcaserep.com/abstract/index/idArt/898864

Background

With the Baby-Friendly Hospital Initiative launched by the World Health Organization in 1991, more women are breastfeeding and providing breast milk to their newborn infants [1]. As these rates increase, the opportunities for errors in breast milk administration also increase. We report the case of a mother who inadvertently breastfed another woman's baby in a Neonatal Intensive Care Unit (NICU).

Case Report

Baby A was born prematurely at 32 weeks' gestation due to preterm labor and was small for gestational age, with a birthweight of 1.25 kilograms (8th percentile, Fenton preterm growth chart) [2]. He had a typical course for his gestational age. He did not require supplemental oxygen; he did need gavage feeds because of premature oral motor skills; he had gastroesophageal reflux requiring thickened feeds with rice cereal; and he had oxygen desaturation and bradycardic events related to the reflux and prematurity. The baby was being fed with about 50% fortified breast milk and 50% preterm formula. The mother was unable to pump enough breast milk to keep up with his demand. One day, when he was two months old, an experienced travel nurse was assigned to his care. She had not taken care of Baby A before and this was her first day working at his NICU.

Baby B was another baby in the same NICU who was born prematurely at 34 weeks' gestation and now at two weeks of age was learning how to feed orally. Baby B had previously been in the bed space that Baby A now occupied. Because of staffing requirements, Baby B moved to a different bed during this nursing shift to be closer to the nurse taking care of him. The Mother of Baby B, who was a recent immigrant to the United States and only spoke Spanish, entered the unit and walked up to Baby A's bedside. The nurse, who did not speak Spanish, had a short conversation with the Mother of Baby B, but neither understood what the other said. The nurse did not check the Mother of Baby B's identification bracelet but handed her Baby A. The Mother of Baby B then began breastfeeding Baby A.

After approximately five minutes, another nurse who knew the Mother of Baby B recognized there was a mix up and stopped the breastfeeding. The attending neonatologist was notified and he first consulted the hospital's infection control unit and the pediatric infectious disease attending physician. The incident was then discussed with both families, using a Spanish translator for Baby B's family, and both families agreed to infectious disease testing. The team checked for Hepatitis B surface antigen, Hepatitis C antibody, rapid Human Immunodeficiency Virus (HIV), and cytomegalovirus (CMV) in Baby A and the Mother of Baby B. Baby A was CMV-positive but negative for the other tests. The Mother of Baby B was negative for all tests including CMV. The team concluded that Baby A had been exposed to CMV from Baby A's Mother.

The attending neonatologist apologized to the families and the nurse was sent home. The Mother and Father of Baby A were initially shocked and angry at what had happened. The Mother of Baby A soon forgave the staff for what had happened; however, the Father of Baby A continues to be angry and has not forgiven the medical team. The Mother of Baby B expressed some embarrassment but did not convey any anger or concern.

Discussion

We believe that our case of accidental breastfeeding in a hospital setting is the first to be described in the literature. Several incidents have been made public by local news [3–7]. We are aware of one lawsuit [8] which was upheld by a state Supreme Court judge but reversed by a four-judge appellate panel, as well as one threatened lawsuit for $30,000 in damages [7]. In at least two of these cases, the nurse involved in the accidental breastfeeding was fired.

Accidental breastfeeding is one of several medical errors involving breast milk, including misadministration of expressed breast milk to the wrong infant as well as inadvertent intravenous administration of breast milk [9–11]. A 35-bed, Level III, Children's Hospital NICU estimated the frequency of misadministration of breast milk as 1.04 errors per month for every 10,000 feeding opportunities [12]. Another study from a 42-bed NICU documented 80 breast milk errors over 10 years, or 0.7 errors per month [13]. In a retrospective study to prevent breast milk errors at a 99-bed, Level III, Children's Hospital NICU, Wolford et al. found 541 unsuccessful attempts to feed the wrong baby in one year [14]. The few medical reports available suggest breast milk errors are relatively common.

Efforts to minimize breast milk errors include centralized breast milk handling, breast milk barcoding, and manual two-person double checks [12,13,15]. Root cause analysis has revealed many opportunities for breast milk errors: labeling, storage, preparation, distribution, administration, staff multitasking, and lack of written guidelines [12]. One group identified 282 potential failure points that could lead to errors in the handling and administration of breast milk [15]. Unfortunately, computerization and barcoding does not eliminate human error [13]. Despite using barcoding systems such as Timeless Medical Systems Mother's Own Milk System (MOMS), providers who fail to double check the milk immediately prior to feeding the infant still run the risk of scanning the milk properly but then administering the breast milk to the wrong baby [16].

For our case, the hospital has a visitation policy that encourages parents, family members, and partners in care to visit the babies in the NICU. Parents are given a green wristband and are allowed access 24 hours a day. The NICU is behind a locked door and parents cannot enter until a staff member has verified their identification and their green wrist band. The staff correctly verified that the Mother of Baby B was a parent of a NICU patient before allowing her to enter. The failure to follow the policy occurred after the Mother walked to the wrong bed space. The nurse at the bedside assumed that the Mother had come to visit the correct baby. She saw that the Mother was wearing a green wristband but she did not verify her name or cross reference it with the baby's name. To make matters worse, she could not speak the Mother of Baby B's language and did not seek out a Spanish translator to facilitate communication.

We are unsure why the Mother of Baby B agreed to breastfeed the wrong infant. Both parents of Baby B were gracious, understanding, and deferential to the medical staff. We wonder whether the respect they held for the medical team prevented the Mother of Baby B from pointing out to the Nurse her error and whether culturally she felt it was not her place to confront the Nurse. Although it may seem difficult to understand how a mother could not recognize her two-week-old infant or how she could agree to breastfeed someone else's baby, the compounding effects of exhaustion, a dimly lit environment, and strong trust in the medical providers could play a role. Given the circumstances, we did not press the Mother of Baby B to explain why she did not speak up.

For circumstances in which a baby receives the wrong breast milk, the United States Center for Disease Control recommends that the incident should be treated in the same manner as if an accidental exposure to other body fluids had occurred [17]. In our case, the NICU had its own policy, which was to notify the hospital's Infection Control and to perform HIV, Hepatitis B, Hepatitis C, and CMV testing, and other testing depending on the situation. Fortunately, the Mother of Baby B was negative for all tests. Testing the Mother of Baby A would have helped the team to identify her CMV status and verify the source of CMV transmission.

The overall risk of disease transmission from breast milk misadministration is low. Hepatitis B virus has been found in breast milk, but there is no evidence that breastfeeding increases the risk of mother-to-child transmission [18–20]. Breastfeeding is not contraindicated for a mother who is a chronic Hepatitis B carrier if the infant has received the Hepatitis B vaccine and Hepatitis B immunoglobulin [18]. There have also been studies which have found Hepatitis C in breastmilk, but there are no studies that have linked transmission of the disease to breast milk [21]. Therefore, breastfeeding by women with Hepatitis C infection is not contraindicated. Contraindications to breastfeeding include mothers who are positive for HIV, human T-cell lymphotrophic virus type I or II, untreated brucellosis, active (infectious) untreated tuberculosis, or active herpes simplex lesions on the breast [22]. There are cases of HIV transmission via breast milk, but there has never been a reported case of HIV transmission through a single breast milk exposure [17]. In the industrialized world it is not recommended that HIV-positive mothers breastfeed. In the developing world, however, where mortality is increased in non-breastfeeding infants from a combination of malnutrition and infectious diseases, the benefits of breastfeeding may outweigh the risk of acquiring HIV infection from human milk and breastfeeding is not contraindicated [22].

CMV is a common virus that leads to asymptomatic or self-limited infection in healthy children and adults [23]. There is no contraindication for a CMV-seropositive mother to breastfeed a full-term infant. In an extremely low birth weight infant, there is a possibility that CMV acquired from breast milk may be associated with a late-onset sepsis-like syndrome. However, the value of routinely feeding human milk from CMV-seropositive mothers to preterm infants outweighs the risks of clinical disease, especially since long-term neurodevelopmental abnormalities have not been definitively associated with breast milk–acquired CMV infection [22]. We admit that the long-term follow-up data on the effects of postnatally acquired CMV infection are limited and that congenital CMV infection can lead to neurodevelopmental disorders and hearing loss [23,24]. Six months of antiviral treatment in infants with severe symptoms or central nervous system disease has been shown to improve hearing and neurodevelopmental outcomes [23,25]. Treating asymptomatic infants has not shown a benefit [23]. We presume that Baby A in our case had already been exposed to CMV from his biological mother. Because he was clinically well, he was not a candidate for antiviral treatment, and we suspect the transmission occurred either via breast milk or vertical transmission late in gestation [26].

Although we disclosed the medical error immediately to the family of Baby A, we were not able to mitigate their distress. Many experts state that providers have an ethical imperative to disclose errors to patients and that telling patients what happened is not enough [27]. Expressing regret for the unanticipated outcome with a formal apology is necessary [28]. An apology has been shown to confer psychological and physiological benefits to patients and "subtracts insult from injury" [29–31]. Furthermore, apologies and lower payouts in malpractice cases have been correlated [32]. In our case, the physician expressed regret to the family. However, the nurse involved in the case had been sent home and did not have further contact with the family. We wonder: if the nurse had been given the opportunity to disclose the error to the family

alongside the physician, would her apology have benefited the families? We also wonder why the Mother of Baby B was relatively quiet in comparison with the family of Baby A. When pressed, she expressed no concerns. We acknowledge that both families are at risk for experiencing distress and deserve equal attention from the medical team.

Before identification and concern for transmission of these viruses, history reveals that wet nursing was widely practiced in all cultures until the end of the 19th century [33,34]. A wet nurse is a woman who breastfeeds and cares for another's child, often for pay [35]. In the Bible, the Pharaoh's daughter employed a wet nurse [36]. The Code of Hammurabi outlined rules for wet nursing [37]. The Greek gynecologist Soranus was the first to document the qualities that defined a good wet nurse: healthy, sympathetic, good color, strong features, medium sized breasts, and white breast milk without smell [38]. A 1715 law of Louis XIV established the Central Wet Nurses' Office in the rue Sainte-Appolline for Parisian families to choose wet nurses [39]. During the 17th century in certain parishes in Buckinghamshire and Herefordshire, wet nursing was a major source of income [40]. With improved sanitation, canned sterile formula, and concern for syphilis and tuberculosis transmission, wet nursing gradually declined. The World Health Organization in 2003 stated, "For those few health situations where infants cannot, or should not, be breastfed, the choice of the best alternative... [including] breast milk from a healthy wet-nurse or a human-milk bank... depends on individual circumstances" [41]. Wet nursing is making a comeback among wealthy Chinese people and Hollywood celebrities [42,43]. Cross-nursing or reciprocal breastfeeding has also been reported, although it is usually done covertly [44–46]. The La Leche League, an international nonprofit organization dedicated to providing education and support to women who want to breastfeed, does not encourage wet nursing or cross-nursing of infants [47].

In the past, infant formula was the preferred choice to improve overall growth in preterm infants. Preterm infants experience increased nutritional needs above that which can be provided by native breast milk [48]. Infants who are predominantly formula-fed have shown better growth over those predominantly fed human milk [49,50]. A cohort study of 470 preterm infants showed that, on average, infants whose diet consisted primarily of formula weighed about 500 g or 18.5% more at term-corrected age than infants fed mostly human milk [51]. However, there are many benefits to feeding with breast milk over formula, and the American Academy of Pediatrics now recommends breast milk as the primary form of nutrition for infants [22]. Breastfeeding results in improved infant and maternal health outcomes, including reductions in infections and inflammatory diseases, improved respiratory and gastrointestinal health, and better neurodevelopmental outcomes [22]. For preterm infants, adding nutritional fortification to human milk overcomes much of the prior concerns regarding impaired growth with human milk alone [49,52–55]. Human milk fortification, therefore, permits combining good growth as well as conferring associated better outcomes with human milk, including decreased rates of retinopathy of prematurity and bronchopulmonary dysplasia [56–58].

Based on all of the benefits of breast milk, a dilemma arises when a mother is unable to produce enough breast milk for her infant. The United States Surgeon General and the American Academy of Pediatrics have issued calls to provide banked donor milk to vulnerable infant populations [22,59]. Donor milk has been shown to improve outcomes for very low-birthweight infants over formula [60–63]. Because of the potential for transmission of both known and unknown diseases, donor or shared breast milk needs to be pasteurized [60]. Over the last five years, the number of NICUs contracting with breast milk banks to provide pasteurized donor breast milk has increased [63]. Some hospitals have started using pasteurized donor milk for term infants [61]. However, some institutions have still not embraced pasteurized donor milk. Barriers include cost, lack of availability, and perceived parental resistance [63]. In our hospital, Baby A was not offered pasteurized donor milk. Our policy recommends pasteurized donor breast milk for babies born less than 32 weeks' gestation and with birth weights less than 1,500 grams.

To our knowledge, this is the first case of accidental breastfeeding in a hospital setting to be described in the literature. Parental misidentification and a language barrier led to the error. An infectious disease workup did not find any evidence of disease transmission from this event.

Conclusions

Increased attention to minimize breast milk errors is needed. Despite a long history of wet nursing, unregulated breast milk sharing and cross-nursing is not recommended. Instead, if a mother cannot provide breast milk herself, pasteurized donor breast milk from breast milk banks is encouraged.

Conflict of interest

The authors declare no conflict of interest.

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