EUROPEAN JOURNAL OF BIOMEDICAL AND PHARMACEUTICAL SCIENCES
http://www.ejbps.com

ISSN 2349-8870
Volume: 8
Issue: 8
567-569
Year: 2021

BREAST MILK JAUNDICE: AN INNOCUOUS CAUSE OF NEONATAL JAUNDICE THAT REQUIRES FULL ATTENTION

Egbuchiem Henry, MD[1*] and Oshobe Akpezi, MD[2]

[1]Everest Foundation Scholar, Los Angles, California, United States of America. ORCID ID. https://orcid.org/0000-0002-2623-9218
[2]Ashtabula County Medical Center, Ashtabula, Ohio, USA.

***Corresponding Author: Henry Egbuchiem**
Everest Foundation Scholar, Los Angles, California, United States of America.

Article Received on 21/06/2021 **Article Revised on 11/07/2021** **Article Accepted on 01/08/2021**

ABSTRACT

Breast milk jaundice is a condition found in breast-fed neonates and it is considered to be a prolongation of physiologic jaundice caused by a factor found in breast milk. Although it is often referred to as a benign condition, the presence of increased unconjugated hyperbilirubinemia and its ability to cross the blood-brain barrier can lead to serious life-threatening conditions if not adequately treated in a timely manner. We report a case of a 48hours old female neonate who was accidentally discovered to have scleral icterus and subsequent hyperbilirubinemia on laboratory investigations. After numerous laboratory and imaging investigations to rule out other sinister causes of pathologic and physiogic hyperbilirubinemia, she was diagnosed with breast milk jaundice and managed with several episodes of exchange blood transfusion, phototherapy, and continuous breastfeeding. Even though clinicians consider breast milk jaundice as a diagnosis of exclusion there is a need to have a strong index of suspicion because of the potential of serious life-threatening complications in neonates.

INTRODUCTION

Exclusive breastfeeding for at least six months is a practice that has been adopted and encouraged by the world health organization and other regulatory bodies including the American pediatric association. This is because breastfeeding has numerous health benefits for both mother and the newborn. Breast milk is believed to contain the essential nutrients required for survival and also provides protection against many common infant diseases. After delivery, It is good practice to commence breastfeeding a newborn as soon as possible. However, Hyperbilirubinemia with the subsequent clinical presentation of Jaundice is a common condition associated with the practice of breastfeeding. Unconjugated bilirubin, an important substrate found in physiologic jaundice, will cross the blood-brain barrier and cause neuropathologic disorders. Hence the need to monitor bilirubin levels in neonates with clinical presentation of jaundice especially in the first few days of life. The relationship between breastfeeding and the subsequent development of jaundice has been well documented. More importantly, the timing of jaundice is an indicator for determining the etiology of jaundice in most cases (i.e, Pathologic vs Physiological) and physicians are often confronted with the dilemma of caring for breastfed neonates who have jaundice because of the practice of breastfeeding. What do you do when the levels of bilirubin suddenly increases in a relatively stable patient, or when is it ever beneficial to stop breastfeeding the jaundiced neonate, and what principles are essential in managing a neonate with prolonged unconjugated hyperbilirubinemia are just a few of the issues physicians encounter in treating patients with hyperbilirubinemia. This case report uses the clinical presentation and management of a jaundiced neonate to answer the aforementioned question.

CASE PRESENTATION

48hours old female neonate delivered via the spontaneous vaginal route to a 26-year-old G5P5 woman was noticed to have yellow discoloration of her eyes (Figure 1). The mother denies complications during pregnancy, and delivery was unremarkable except for meconium-stained liquor. There is a history of mild Neonatal Jaundice in previous pregnancies that spontaneously resolved after a short stay in hospital and treatment with phototherapy only. Apgar score after delivery was 8 and 9 at one and five minutes respectively. Both mother and baby had O Positive blood group. On examination, the baby was acyanosed, slightly pink, with Sclera Icterus, afebrile, normal skin turgor and no pedal edema. She was conscious, alert, and active with normal sucking, rooting, grasping, and complete Moro reflexes. The cardiovascular system showed only s1 and s2, with no added sounds or murmurs. Also, her chest was clinically clear, with good air entry bilaterally and an

absence of adventitious sound. Abdominal examination, urogenital examination, musculoskeletal and spine examinations were all unremarkable. She had normal Vital signs. A differential diagnosis of neonatal jaundice, G6PD Deficiency, Hereditary Spherocytosis, ABO incompatibility, Biliary Atresia, and Neonatal Sepsis was considered. Blood sample collected for Full blood counts, serum bilirubin measurement, blood grouping, serum electrolytes with lactate dehydrogenase levels, and G6PD assay. She was placed in the photo-therapy chamber and continued breastfeeding. Results of Serum bilirubin showed Total bilirubin of 25 mg/dl, Direct bilirubin of 14 mg/dl, and a % CF of 55% with a normal G6PD assay and Lactate dehydrogenase level. Full blood count was normal except for mild thrombocytopenia and toxic granules of band neutrophils with the notable absence of spherocytes. Subsequently, She was given IV Gentamicin 4 mg/kg 8 hourly and Ceftazidime 50 mg/kg BID and scheduled for Exchange blood transfusions.

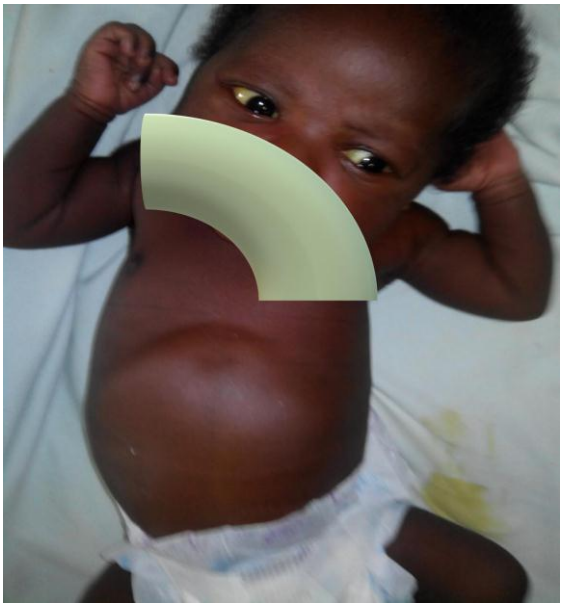

Figure 1: Showing Scleral Icterus in the neonate.

On the sixth day of life, sclera icterus appeared worse and the result of 24hours Post exchange blood transfusion showed Total bilirubin of 23.3 mg/dl, Direct Bilirubin of 13.9 mg/dl %CF of 59.6%. She continued photo-therapy and on the 10th of life, Liver functions tests results showed ALT- 75uMol/L(N< 40), AST-128uMol/L (N<40), Alkaline Phosphatase level-594uMol/L(N<270) and Serum bilirubin levels showed Total Bilirubin of 44 mg/dl, Direct Bilirubin of 27.9 mg/dl %CF-63.5%. A second exchange blood transfusion was done and Post exchange blood transfusion Serum bilirubin showed a Total Bilirubin of 21.8mg/dl, Direct Bilirubin of 16.4 mg/dl, %CF-75.4%. An abdominal ultrasound scan done showed no abnormalities. On the 13th day of life, the baby still had Scleral icterus and serum bilirubin done showed Total bilirubin of 33.3 mg/dl, Direct Bilirubin 18.7 mg/dl, %CF 56.2% However vital signs remain stable and physical examination findings unchanged. The patient's mother was advised to tentatively withhold breastfeeding for 48hours, this briefly reduced scleral icterus. But repeat Bilirubin done after 48hours showed Total Bilirubin of 35.1 mg/dl, Direct Bilirubin 18.7 mg/dl, %CF 58%. On the 21st day of life, a repeat laboratory Bilirubin level showed a Total Bilirubin of 35.1mg/dl, Direct Bilirubin-20.2 mg/dl, %CF-57.5%, and Full blood count showed normal values. On the 22nd day of life, repeat serum bilirubin levels showed Total Bilirubin 10 mg/ dl, Direct Bilirubin 7.2mg/dl, %CF 72%. These lead us to make the diagnosis of breast milk jaundice and the patient was discharged after the mother was educated concerning the need to continue breastfeeding. On a follow-up visit at 30 days of life, the Patient was seen in the clinic without any symptoms of jaundice and normal Serum bilirubin levels. Figure 2 below shows the trend of the levels of serum bilirubin for the patient during the period of evaluation.

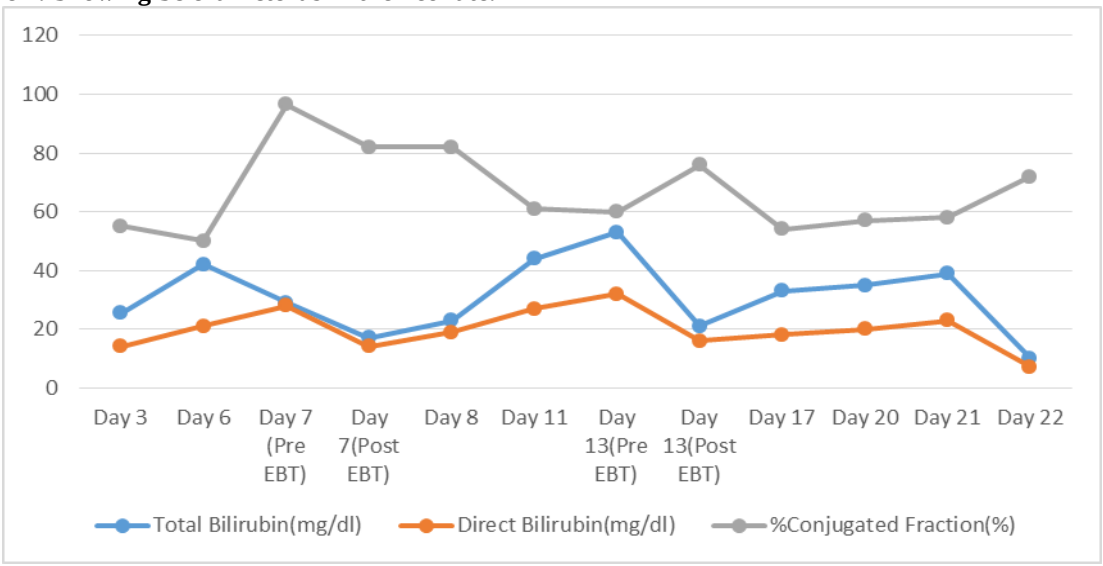

Figure 2: Showing trends for Total Bilirubin, Direct Bilirubin and % Conjugated fraction of bilirubin for the patient.

DISCUSSION

According to Auerbach et al, jaundice as a result of breastfeeding a neonate is either due to frequency of breastfeeding(i.e how often baby feeds, how well baby suckles, and the addition of complementary /supplementary bottle feeds) and an unidentified factor in the breast milk of a small minority of women.[1] The former is called breastfeeding-related jaundice and the latter is called breast milk jaundice. Unlike breastfeeding jaundice that is predominantly observed in the first week of life, breast milk jaundice usually occurs in the second/third week of life for most neonates, this unconjugated hyperbilirubinemia is largely considered to be an extension of physiologic jaundice in a healthy newborn caused by the increase in the enterohepatic circulation of serum bilirubin.[2,3]

From our case presentation, the first indication of jaundice appeared within 48hours after birth (much earlier than what is often seen in patients diagnosed with breast milk jaundice) which lead us to initially explore pathologic causes of neonatal jaundice. However, further workup ruled out ABO/Rhesus incompatibilities, G6PD deficiency, Hereditary Spherocytosis, and Sepsis. Also, the presence of elevated liver function tests and increased levels of direct/conjugated bilirubin fractions lead us to consider biliary obstruction as the etiology for jaundice but this idea was debunked by the unremarkable results of the abdominal imaging study. It was only after we had eliminated other sinister causes of neonatal jaundice and observed a slight clinical improvement with the temporary cessation of breastfeeding before we settled for the relatively benign reason for prolonged jaundice in our patient.[1] It is important to note that cessation of breastfeeding is not advised for patients with breast milk jaundice, since this practice makes hyperbilirubinemia worse as evident in our case. According to Soldi, et al, breastfeeding interruptions in the diagnosis of breast milk jaundice is no longer encouraged due to its low specificity and the risk of disregarding other potentially dangerous disorders.[4]

Some researchers such as Preer, et al have described breast milk jaundice as a benign or innocuous condition.[5] It is important to not only monitor, but also promptly treat severe hyperbilirubinemia to avoid life-threatening complications of hyperbilirubinemia, especially kernicterus. In addition to continuous phototherapy, our patient had to undergo exchange blood transfusion twice in less than a month to help with the removal of the elevated unconjugated bilirubin.

CONCLUSIONS

We always encourage our patients to start breastfeeding their newborn as soon as possible after delivery and continue this practice for at least 6 months. But as elucidated in this study and others, this practice is not without various life-threatening problems. Yellow skin and mucosal surfaces are just benign problems that may arise from the practice of breastfeeding but other serious complications such as Kernicterus, Athetoid Cerebral palsy, and hearing loss may also arise. Breast milk jaundice needs more attention as this simple physiologic process can lead to serious complications if not properly treated. The practice of considering other more sinister etiology as the reason for jaundice or serum hyperbilirubinemia should not limit your index of suspicion for making the diagnosis of breast milk jaundice and on no account should you encourage the temporary cessation of breastfeeding to aid in the confirmation of the diagnosis of breastfeeding jaundice.

Conflict of Interest: The authors declare that they have no competing interests.

Funding statement: No funding was received for this study.

Equal Author's contribution statement: All the authors contributed equally in the preparation of this study.

ACKNOLEDGEMENT: None.

REFERENCES

1. Auerbach, K. G., & Gartner, L. M. Breastfeeding and human milk: their association with jaundice in the neonate. Clinics in perinatology, 1987; 14: 89-107.
2. Gartner LM. Breastfeeding and jaundice: J Perinatol. 2001211, 25:39. 10.1038/sj.jp.7210629
3. Bratton S, Cantu RM, Stern M: Breast Milk Jaundice. In: StatPearls. StatPearls Publishing, Treasure Island (Florida), 2020.
4. Soldi A, Tonetto P, Chiale F, et al.: Hyperbilirubinemia and management of breastfeeding. J Biol Regul Homeost Agents. 2012; 26: 25-29.
5. Preer GL, Philipp BL: Understanding and managing breast milk jaundice. Arch Dis Child Fetal Neonatal Ed. 2011, 96:461-466. 10.1136/adc.2010.184416.