CASE REPORT

Extremely Post-Term Infant with Adverse Outcome

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ABSTRACT

Post-term infants are born at a gestational age >42 weeks or 294 days from the 1st day of the last menstrual period. Post-term infants have higher rates of morbidity and mortality than term infants. Risk factors for post-term births include the following: Prim gravida, prior post-term pregnancy, and genetic predisposition as a concordance for post-term pregnancy is higher in monozygotic than dizygotic twin mothers, maternal obesity, older maternal age, and male fetal gender. We are presenting a case of newborn infant delivered at post-term 47 weeks (post conception age) who was born through thick meconium stained liquor delivery showed sever skin peeling. He needed respiratory ventilation since birth and his brain magnetic resonance imaging was abnormal. This report aims to raise awareness among obstetric-gynecology and neonatologists about complications of post maturity and to put a plan to deliver these babies before reaching 42 weeks gestation

Key words: BW (Birth weight), CPAP (continuous positive airway pressure), LSCS (lower section cesarean section), MRI (magnetic resonance imaging), SGA (Small for gestation)

INTRODUCTION

The clinical presentation of post-term infants is based primarily on fetal growth. In most cases, continued fetal growth results in higher birth weight (BW) in the post-term than term infant, with an increased likelihood of macrosomia,[2-4] and post-term macrosomic infants are at risk for birth injury due to prolonged labor, cephalopelvic disproportion, and shoulder dystocia.

However, fetal growth restriction occurs in some post-term infants, most likely caused by a poorly functioning placenta that is unable to provide adequate nutrition.[2-4] This results in the birth of a small for gestational age (SGA) infant, who usually appears malnourished. In these infants, the skin appears loose, especially over the thighs and buttocks, and has prominent creases. Vernix caseosa is decreased or absent. Lanugo hair is sparse or absent, while scalp hair is increased. The nails typically are long. The infants generally have the appearance of increased alertness and a "wide-eyed" look.

Both macrosomic and SGA post-term infants are at increased risk for perinatal asphyxia.[2] Post-term infants are more likely than term infants to have low Apgar scores, an indirect measure of perinatal asphyxia.[5-7] Meconium aspiration, congenital malformations, and persistent pulmonary hypertension are also more frequently observed in post-term infant.[6-8] In one autopsy study, post-term infants were more likely than control term infants to have evidence of aspiration of amniotic fluid and/or meconium, which may have contributed to respiratory failure and death.[9]

CASE REPORT

We present a case of post-maturity-related perinatal morbidity with delivery at 47 weeks. No cause beyond post-maturity was found except that mother had a plan for elective lower segment cesarean section (LSCS) for previous LSCS, but mother neglected the date as she was afraid of the operation and wanted to wait until labor pains.

This non-local expectant mother coming to Qatar from Pakistan was 32 years old, gravida 5 para 4 (history of three normal deliveries with fourth delivery as LSCS) gestational diabetic on diet and with a history of good past health. This

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was unplanned pregnancy so unsure about the date, but mother mentioned that LMP was on 16/3/2017, so plan was put by gynecology doctors to do elective LSCS on 24/12/2018, but mother neglected that date.

Ultrasound examination done at 35 weeks showed normal fetal growth.

AT 47 weeks , she attended the obstetrics and gynecology emergency department with labor pain. She was admitted to the obstetrics ward, and a cardiotocogram showed fetal distress in the form of fetal bradycardia and the liquor was meconium stained., Baby was delivered by vacuum assisted vaginal delivery. With birth weight of 2475-g infant male covered with thick meconium with severe skin peeling [Figures 1 and 2] with Apgar scores of 9/10 at 1 and 5 min, respectively. Cord gas showed arterial PH 7.06 BE −11.3 PCO2 74 and venous PH 7.13 BE −11.8 PCO2 52 . At 5 min, the infant developed respiratory distress needed endotracheal intubation and mechanical ventilation with oxygen of 40%.

Then infant was transferred to NICU, kept on mechanical ventilation and during that period he got left side pneumothorax needed drainage [Figures 3 and 4], and continue on mechanical ventilation for 2 days, His laboratory result as initial simple blood tests and Metabolic screen test were normal.

On day 3, the infant had abnormal non-rhythmic movements of all extremity as convulsion which was aborted with one dose of phenobarbitone. On day 9days of life Brain Magnetic resonance imaging was done and showed mild bilateral symmetric diffusion restriction involving the posterior limb of internal capsule, dorsal midbrain, and dorsal pons. Features were reported as being in favor of metabolic encephalopathy over hypoxic brain injury. During hospital stay infant had feeding difficulty started orogatric tube feed until the 10th day of life when he was discharged on full feed by sucking with follow-up at the high risk baby clinic and pediatric neurology clinic.

Figure 1: Staring eye

Figure 2: Skin peeling

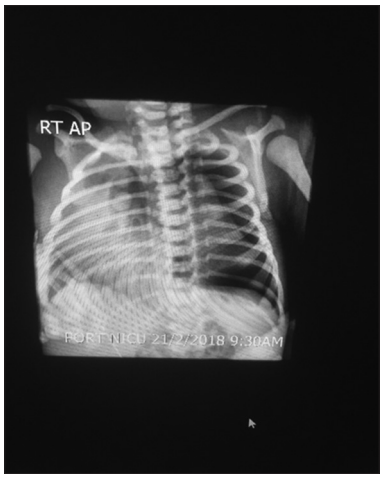

Figure 3: Left pneumothorax

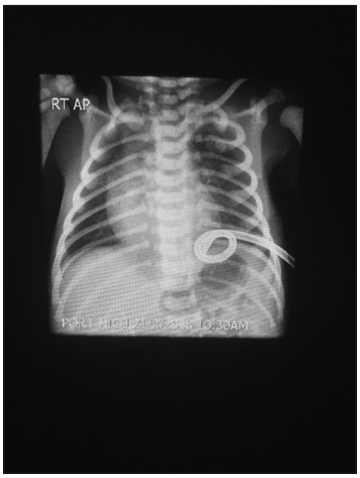

Figure 4: Drained left pneumothorax

DISCUSSION

As the optimal intervention is the prevention of post-term births, it has been suggested that induction of labor be routinely performed in mothers who are at 41 weeks' gestation.

Nevertheless, there are settings in which induction of labor at 41 weeks gestation is not an option. For these post-term deliveries, the neonatal management consists of screening and treating complications associated with prolonged pregnancy (e.g., meconium aspiration, perinatal asphyxia, and persistent pulmonary hypertension) and providing routine newborn care.

- Before delivery, an assessment of the need for neonatal resuscitation is made based on the GA, anticipated BW, presence of a congenital anomaly or labor complications, mode of delivery (e.g., cesarean delivery), and maternal history.
- Immediately after delivery, routine neonatal care is provided which includes drying, clearing the airway of secretions if present, maintaining warmth, and a rapid assessment of the infant's clinical status based on vigor, including cry, heart rate, and tone, as well as an examination to identify any major congenital anomaly.

The need for further intervention is based on this initial evaluation. If the infant does not require additional resuscitation, the infant should be given to the mother for skin-to-skin care and initiation of breastfeeding right after birth. Infants should be fed as quickly as possible after delivery to avoid hypoglycemia.

- Further evaluation following transition from the delivery room includes a comprehensive examination to identify any evidence of birth trauma (e.g., perinatal depression, brachial plexus injury, or clavicular fracture), congenital defects, or complications associated with prolonged pregnancy.
- Laboratory screening for hypoglycemia and polycythemia should be performed in infants with evidence of poor fetal growth within the first 1–2 h following delivery.
- If there are no significant complications that require further intervention, routine newborn care should be provided.

Long-term outcome

Although data are limited on the long-term outcome of post-term infants, these patients may be at risk for neurodevelopmental complications as follows:

Cerebral palsy (CP)

Children born post-term appear to have an increased risk of CP compared with those who were born at term. This was illustrated in a population-based follow-up study from Norway which reported that children who were delivered at a GA >42 weeks were more likely to develop CP than children born at 40 weeks' gestation (relative risk 1.4, 95% confidence interval 1.1–1.8).[10] The prevalence of CP in children with a GA >42 weeks was 1.44/1000 patients.

Epilepsy

In a cohort Danish study, it appears that prolonged gestation was a risk factor for early epilepsy that occurred within the 1st year of life.[11]

However, there was no evidence of an association between post-term delivery and epilepsy beyond 1 year of age.

Developmental outcome

In an older cohort study from 1977, post-term infants had comparable motor scores on the Bayley Scales of Infant Development at 8 months of age compared with controls, but cognitive scores were lower.[12]

Behavioral problems

In a study of infants in the Netherlands, the risk of behavioral problems and attention deficit disorder was increased among post-term infants, compared with term counterparts.[13]

REFERENCES

1. Mori R, Ota E, Middleton P, Tobe-Gai R, Mahomed K, Bhutta ZA, *et al.* Zinc supplementation for improving pregnancy and infant outcome. Cochrane Database Syst Rev 2012;7:CD000230.
2. Mannino F. Neonatal complications of postterm gestation. J Reprod Med 1988;33:271-6.
3. Vorherr H. Placental insufficiency in relation to postterm pregnancy and fetal postmaturity. Evaluation of fetoplacental function; Management of the postterm gravida. Am J Obstet Gynecol 1975;123:67-103.
4. Caughey AB, Nicholson JM, Washington AE. First-vs second-trimester ultrasound: The effect on pregnancy dating and perinatal outcomes. Am J Obstet Gynecol 2008;198:703.e1-5.
5. Haavaldsen C, Sarfraz AA, Samuelsen SO, Eskild A. The impact of maternal age on fetal death: Does length of gestation matter? Am J Obstet Gynecol 2010;203:554.e1-8.
6. Badawi N, Kurinczuk JJ, Keogh JM, Alessandri LM, O'Sullivan F, Burton PR, *et al.* Antepartum risk factors for newborn encephalopathy: The Western Australian case-control study. BMJ 1998;317:1549-53.
7. Eden RD, Seifert LS, Winegar A, Spellacy WN. Perinatal characteristics of uncomplicated postdate pregnancies. Obstet Gynecol 1987;69:296-9.
8. Heimstad R, Romundstad PR, Eik-Nes SH, Salvesen KA. Outcomes of pregnancy beyond 37 weeks of gestation. Obstet Gynecol 2006;108:500-8.
9. Hernández-Díaz S, Van Marter LJ, Werler MM, Louik C, Mitchell AA. Risk factors for persistent pulmonary hypertension of the newborn. Pediatrics 2007;120:e272-82.
10. Seo IS, Gillim SE, Mirkin LD. Hyaline membranes in postmature infants. Pediatr Pathol 1990;10:539-48.
11. Moster D, Wilcox AJ, Vollset SE, Markestad T, Lie RT.

Cerebral palsy among term and postterm births. JAMA 2010;304:976-82.
12. Ehrenstein V, Pedersen L, Holsteen V, Larsen H, Rothman KJ, Sørensen HT, *et al.* Postterm delivery and risk for epilepsy in childhood. Pediatrics 2007;119:e554-61.

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