

Erythema Toxicum Neonatorum

Dr. Prashant Kumar Singh¹, Dr. Saurabh Kataria²

¹Fellow NNF, Department of Pediatrics and Department of Neonatology, Cloudnine Hospital (Sec - 51), Noida, Uttar Pradesh, India

²HOD Department of Neonatology, Department of Pediatrics and Department of Neonatology, Cloudnine Hospital (Sec - 51), Noida, Uttar Pradesh, India

Abstract: ***Background:** Erythema toxicum neonatorum (ETN) is a benign, self - limited, transient, evanescent eruption - small yellowish pustules and papules that are surrounded by an irregular reddish wheal. The majority of lesions are temporary, often disappearing within a few hours and reappearing elsewhere sparing the soles and palms. ETN can present within 24 hours of life and resolves in 7 - 14days. **Case discussion:** We present a case of late preterm vigorous MSL (Meconium stained liquor), SGA (small for gestation) newborn with pustular lesions all over the body at the time of birth sparing the back, palms, and soles which were diagnosed as ETN after ruling out sepsis and other causes. All the lesions healed without scarring and there was no evidence of congenital blistering disorders in newborn. **Management:** The baby was managed conservatively and the lesions resolved on 15th day of life on their own. **Conclusion:** Intrauterine ETN is rare and only 2 such cases reported worldwide as per our best knowledge, of which none have been from India. Also, our baby was born with meconium - stained liquor and its association with ETN has been previously attempted to study but without any definitive conclusion.*

Keywords: Erythema toxicum neonatorum at birth, meconium - stained liquor, Neonate

1. Introduction

Erythema toxicum neonatorum (ETN) is a common benign skin condition seen in healthy newborns. The lesions are characterized by multiple erythematous macules and papules ranging from 1 to 4 mm that rapidly progress to pustules on an erythematous base. They are usually found over the trunk and proximal extremities, sparing the palms and soles. They may be present at birth but typically appear within one to two days. The eruption is self - limiting with most of the rashes resolving within 5 - 14 days without any systemic manifestation. (1)

Pustules are 2 to 4 mm in diameter and contain pale yellow material. They are composed of more than 50% eosinophils. Peripheral blood eosinophilia of at least 7% and up to 15% frequently coexists. (2)

Though this is one of the most commonest skin rashes observed in neonates, its etiology remains elusive. Many theories have been postulated as a possible mechanism for this eruption: prolonged contact of the meconium with the skin, vigorous removal of vernix caseosa, mechanical/chemical irritants, intestinal toxins, allergens, a transient graft versus host reaction by maternal lymphocytes, hormonal influences and a cutaneous immune reaction to commensal microflora. William Smellie, an 18th - century Scottish obstetrician concluded that ETN was a result of meconium on the neonate's skin (3, 4) Erythema toxicum neonatorum present at birth has been cited as evidence suggesting that the condition develops independent of allergens in the environment. (5)

The diagnosis of ETN usually is clinical. Microscopic evaluation of erythematous macules and patches shows superficial dermal edema with a mild diffuse and perivascular eosinophilic infiltrate. (6)

The differential diagnosis includes sepsis, staphylococcal folliculitis, miliaria rubra, miliaria crystallina, pustular

miliaria, congenital candidiasis, acne neonatorum, transient neonatal pustular melanosis (TNPM), infantile acropustulosis, neonatal varicella, and occasionally incontinentia pigmenti. (7 - 10)

The most useful therapy remains reassurance of the caregivers that the eruption is benign and will resolve without sequelae. (7)

2. Clinical Description

A female baby was born to a primigravida mother with premature rupture of membranes (22 hours) through lower section cesarean section at 35 + 3 weeks of gestation with meconium - stained liquor and fetal distress. The baby was vigorous at birth but had respiratory distress with a Silvermann Anderson Score of 5/10 and hence was shifted to NICU and started on free flow oxygen[at]2L/m. On examination, the baby was noticed to have multiple vesicles which were fluid - filled, (Figure.1) approximately 3 - 4mm all over the body sparing the back, palms, and soles; within the first hour of life. (figure2) Routine investigations like sepsis screen, chest X - ray, blood gas along with gram stain and culture and sensitivity taken from the area of lesions were sent. VDRL and TPHA serology was also sent to rule out syphilis. The sepsis screen tested negative, but differential counts showed marked eosinophilia. Chest X - ray showed multiple homogenous opacities which was suggestive of meconium aspiration syndrome. The gram stain and culture from the lesions were sterile. Blood cultures were sterile. As erythema toxicum can have a similar appearance to herpes, a Tzank smear was also done to rule out this diagnosis; which was negative for herpes and showed 80 % eosinophils with 20% neutrophils. These reports were all suggestive of erythema toxicum neonatorum. A dermatology review was taken and the diagnosis was confirmed and supportive management continued.

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Figure 1



Figure 2



Figure 3

Lesions were self - resolving, with new lesions setting in and older lesions healing with hyperpigmentation but no scarring. The baby was oxygen free on day 4 of life and started on feeds on day2 by orogastric tube followed by Katori spoon. She was started on breastfeeds by day 7 of life. (figure3) Antibiotics that were given empirically were stopped on 3rd day as all cultures were sterile. The baby was then shifted to the mother's side on day 8 of life and discharged on day 10 of life. On follow - up on the 14th day, all lesions were healed with no scars left.

3. Discussion

Erythema toxicum neonatorum is characterized by small pinkish - red macules which may or may not have a central papule or pustule (11). The onset is typically after the first day of life and it resolves spontaneously. It was postulated centuries ago that meconium on the baby's skin acts as an irritant contributing to the development of ETN (12). Sahisnuta Basnete et al (13) stated that the odds of developing ETN were higher in babies born through MSAF (meconium - stained amniotic fluid) but requires further literature review.

In this case, we suspected the cause of ETN at birth could be meconium - stained liquor, as there was no h/o atopy or any infection in the mother. No evidence of sepsis was found as all cultures were sterile. Association with meconium - stained liquor has been previously reported but this needs further research and more literature review. Previously reported cases with a similar presentation were reported by Harvey et 1962 but no evidence of meconium - stained

amniotic fluid was present in those cases (14). Furthermore, another case was reported by Marino et al in 1965 in an African Negra baby in which no association was seen and lesions resolved by 7 days. (15)

4. Conclusion

The diagnostic importance of this benign disease is to differentiate it from other common diseases like sepsis, syphilis and congenital epidermal bullosa of newborns as lesions can be easily confused with the mentioned conditions and to prevent unnecessary use of antibiotics and other drugs.

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