Case Report

Transient Neonatal Pustular Melanosis: A Possible Cause of Antibiotic Misuse in Neonates

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Abstract

The presence of pustules or vesiculo-pustular lesions in newborns is always a cause of concern both to the family and the attending physician. Transient neonatal pustular melanosis (TNPM) is a benign idiopathic skin condition characterized by vesicles, superficial pustules, and pigmented macules, usually occurring in newborns at birth. It is self-limiting with spontaneous resolution. We report a case of TNPM in a term female who was managed without antibiotic administration and hospital admission.

Keywords: Newborn, pustules, transient, vesicles

Introduction

The presence of pustules or vesiculo-pustular lesions in newborns are always a cause of concern both to the family and the attending physician as it can be mistaken for bacterial skin or subcutaneous tissue infections requiring antibiotic therapy. This diagnostic dilemma tends to arise because a number of infections or diseases with varying prognoses can present with pustular or vesiculo-pustular rashes.[1,2] Transient neonatal pustular melanosis (TNPM) is a benign idiopathic skin condition characterized by vesicles, superficial pustules, and pigmented macules, which are mainly seen in newborns at birth.[3] This innocuous rash is often misdiagnosed, leading to unnecessary hospital admissions with frequent misuse of antibiotics, disruption of mother–infant bonding and exclusive breastfeeding, development of health care-associated (nosocomial) infections, and economic burden on the caregiver. It, therefore, becomes important to differentiate transient benign pustular eruptions from serious cases requiring hospitalization. Clinical features and simple laboratory investigations aid in differentiating TNPM from other pustular lesions of infectious origin.[4]

We present a case of a term female neonate delivered in our facility and diagnosed with TNPM who was conservatively managed without hospital admission and antibiotic, aimed at raising the index of suspicion for this innocuous entity and to highlight the importance of counseling for the parents and other caregivers in its management.

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Case Report

A 5-min-old female neonate was born with pustular rashes on the scalp, limbs, trunk, and perineal area. She was delivered at 38-week gestational age through an elective cesarean section due to unstable lie to a 43-year-old now para three mother. The baby cried well at birth with Apgar scores of 9 at the 1st min and 10 at the 5th min, with a birth weight of 3100 g. There was no history of fever or similar rash in other siblings at birth.

The mother was registered for antenatal care in our facility in the first trimester of pregnancy. She had no fever or rash in the first trimester of pregnancy, and the pregnancy remained uneventful until 12 days prior to delivery when she had a road traffic accident and sustained bruises on the face and limbs. Her retroviral screening test, hepatitis B surface antigen, and Venereal Disease Research Laboratory Tests were negative.

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The mother received her routine antenatal drugs, tetanus toxoid, and intermittent preventive therapy for malaria in pregnancy as prescribed. There was neither peripartum pyrexia nor glucose intolerance. There was no antepartum hemorrhage. Her urinalysis findings were normal, and the membrane remained intact till delivery. Amniotic fluid and placenta showed normal findings macroscopically.

Physical examination revealed an apparently healthy term female neonate with a normal axillary temperature of 36.9°C, pulse rate of 140 beats/min and respiratory rate of 50 cycles/min. The skin had scattered pustules of different sizes measuring 0.1–0.5 cm more on the extensor surfaces of the arms and forearms than flexor surfaces with hyperpigmented postinflammatory macules on the trunk, arms, and forearms interspersed with other pustules [Figure 1, day 1]. Similar rashes were observed on the scalp, perineal area, and feet. Other systems examined were essentially normal. A diagnosis of TNPM was made. The parents were reassured on the benign nature of the rash, and the baby was commenced of exclusive breastfeeding.

Laboratory findings were as follows: the total leukocyte count was 13.2×10^9/L (neutrophils, 48.3%; lymphocytes, 41.0%; and monocytes, 10.7%), hemoglobin level was 14.4 g/dL, and platelet count was 261×10^9/L. Blood film showed normal parameters. Gram staining, microscopy, and culture of the secretions from the pustules did not yield any organism after 48 h.

No treatment was commenced. The dermatologist's review confirmed the diagnosis. The baby was managed on an outpatient basis with daily monitoring for spontaneous resolution of the rash. The pustular rashes ruptured and resolved within 48 h leaving behind hyperpigmented macules [Figure 1, days 2 and 3].

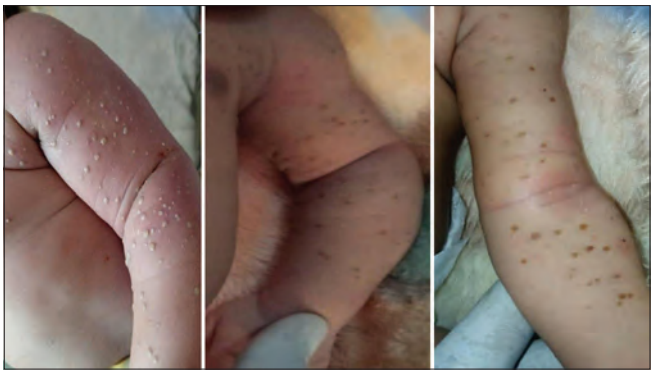

Figure 1: Pustules of different sizes more on the extensor surfaces of the arm and forearm on day 1. Hyperpigmented postinflammatory macules on the extensor surfaces of the arm and forearm interspersed with few pustules on day 2. Hyperpigmented postinflammatory macules on the extensor surfaces of the arm and forearm on day 3

Discussion

The aetiology of TNPM is unknown. No familial predisposition has been identified. Although often misdiagnosed, it is common in newborns delivered at term, and occurs in 5% of African–American newborns and 0.6% of White infants, affecting both sexes.[5] TNPM, initially called lentigines neonatorum, was clearly described in 1976.[6] The index case was a female without maternal or fetal risk for infection. Older siblings did not have similar rashes at birth.

All areas of the body can be affected, including palms, soles, and genitalia but mostly located on the chin, forehead, neck, lower back, and shin. Lesions are usually present at birth.[7] Extensive superficial pustules on a non-erythematous, appearing during the first days of life, are characteristic.[6] Often, only pigmented macules are present at birth, in which case the pustular phase may have occurred *in utero*. Skin findings can be correlated with gestational age at birth. Thus, post-term infants are more likely to have the late finding of pigmented macules. No systemic symptoms are associated with the skin lesions of TNPM.[8] Our patient presented with pustules interspersed with hyperpigmented macules at birth. Lesions, however, spared the palms and soles of the feet.

Vesiculo-pustular lesions can be the presenting features of infectious, inflammatory, genetic, or transient neonatal disorders.[9] Therefore, infectious diseases such as impetigo, candidiasis, varicella, syphilis, and herpes simplex infection should all be taken into consideration before a non-infectious diagnosis is made. The diagnosis is usually made by clinical examination. Wright or Giemsa staining of the pustular contents show neutrophils and occasional eosinophils. No organisms are observed.[10] Skin biopsy shows intracorneal or subcorneal collections of neutrophils with occasional eosinophils, mild acanthosis, keratinous debris, and some intraepidermal edema. Bacterial and viral cultures are negative.[11,12] In this index case, the diagnosis was based on history and examination findings and was supported with normal blood parameters and the absence of bacteria in culture secretions from the pustules.

TNPM is a benign, asymptomatic, and self-limited skin eruption without associated mortality or morbidity. The prognosis for TNPM is good. The vesicles and pustules due to their fragile nature rupture easily and resolve within 48 h, leaving hyperpigmented macules with surrounding collarette of scales that usually fade over 3–4 weeks but may persist for several months. Treatment is therefore not necessary.[12] Our patient was treated as an outpatient without antibiotics. The parents were reassured and counseled on the benign nature of the rash. The pustular rashes underwent spontaneous resolution within 48 h.

Conclusion

TNPM occurring in newborns can easily be misdiagnosed, leading to unnecessary antibiotic use and hospital admissions. A thorough history and physical examination are needed to make the clinical diagnosis. Simple laboratory diagnostic methods such as peripheral blood count and culture of

secretions from the pustules would further aid to differentiate it from serious and life-threatening conditions. It is self-limiting, with the vesiculo-pustular lesions resolving spontaneously within 48 h, thus, no treatment is needed. Counseling of parents about the benign nature of this rash alongside close monitoring will help allay caregivers' anxiety, thus minimizing irrational use of antibiotics.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the legal guardian has given his/her consent for images and other clinical information to be reported in the journal. The guardian understands that the name and initials will not be published, and due efforts will be made to conceal patient identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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