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CASE REPORT

An Infant With Transient Neonatal Pustular Melanosis Presenting as Pustules

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Transient neonatal pustular melanosis is mostly found in full-term black infants. It is a benign and self-limited disease, and the etiology is still unknown. We present a full-term female neonate with multiple vesiculopustular and pigmented macular lesions found immediately after her birth. A skin biopsy showed vesicles consisting of intracorneal and subcorneal aggregates of neutrophils, which is compatible with transient neonatal pustular melanosis. Although it is rare in Taiwan and Asian countries, transient neonatal pustular melanosis should always be considered when pustulosis is found in the neonatal period to prevent the use of unnecessary antibiotics. Dermatological consultation and histological confirmation are sometimes required for the final diagnosis.

1. Introduction

Transient neonatal pustular melanosis (TNPM) mostly affects full-term black infants, but it is relatively rare in Taiwan and other Asian countries.[1] It is a benign and self-limited disease, and the etiology is still unknown. All lesions resolve during the first 2 weeks of life, but the hyperpigmented macules can persist for several months before resolution.[1,2] No treatment is needed.

2. Case Report

A female newborn infant was admitted directly from the delivery room because of multiple vesicular lesions found over the forehead just after her birth. She was born to a G1P1 mother via cesarean delivery at 38 gestational weeks with a birth body weight of 2890 g. Apgar scores were 8 and 9 at the first and fifth minutes, respectively. Perinatal examinations were normal and there was no varicella or other sign of infection. There was no maternal fever and no premature rupture of membranes or family history of hereditary and systemic disease. Upon physical examination, the patient was pink and active, the anterior fontanelle was flat with a width of 2 cm, and body temperature was 35.2°C. Vital signs were as follows, heart rate was 138 beats/min, respiratory rate was 48/min, and blood pressure was 65/32 mmHg. Breathing sounds were clear and heart beats were regular, without murmur. Neurological findings were negative. However, multiple vesicles with yellowish contents, approximately 0.3–0.5 cm in diameter, were found over the forehead, scalp and the neck. Brownish macules with collarettes of white scales were also seen on the chest and inguinal regions (Figure 1). Septic work-up was immediately

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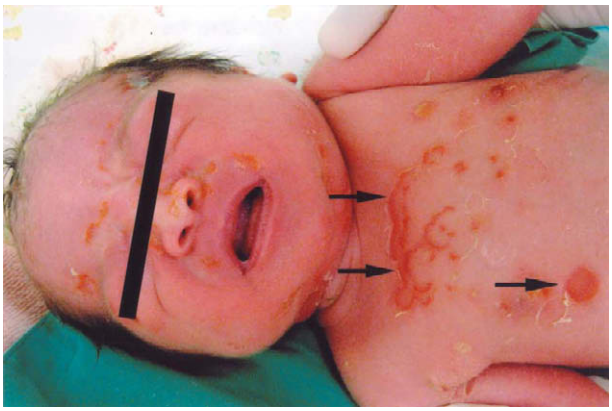

Figure 1 Vesicopustules over the face and pigmented macules with collarettes over the chest on day 1 (black arrows).

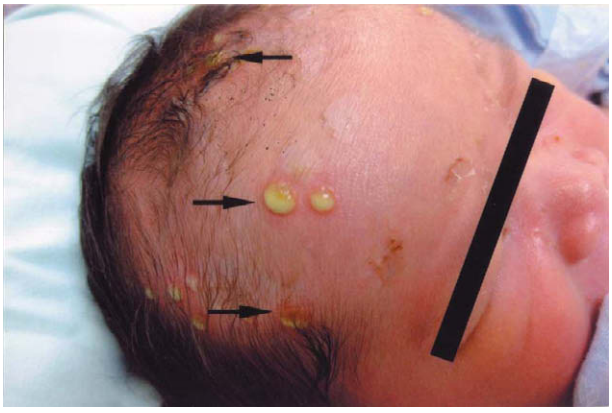

Figure 2 Newly erupted pustules over the forehead on day 3 (black arrows).

performed and the intravenous antibiotics oxacillin and gentamicin were administered.

Laboratory findings were as follows, the peripheral leukocyte count was 29.13×10^9/L (neutrophils, 74%; lymphocytes, 12%; monocytes, 5%; eosinophils, 2%; and myelocytes 5%), hemoglobin concentration was 163 g/L, platelet count was 343×10^9/L, C-reactive protein level was 8.9 nmol/L, sodium was 137 mmol/L, potassium was 3.7 mmol/L, creatinine was 64 μmol/L, glucose was 4.9 mmol/L, alanine aminotransferase was 14 IU/L, and aspartate aminotransferase was 55 IU/L. Serological examinations of syphilis, toxoplasmosis, rubella, cytomegalovirus and herpes infection were also negative.

Vesicles ruptured shortly after the patient's birth, but on the third day of admission, more than 20 similar pustules erupted over the forehead and scalp again (Figure 2). Herpes infection was suspected at that time. Intravenous acyclovir was commenced and discontinued 3 days later when the serological examination result was negative. Gram stains of the pustular content showed no bacteria. Bacterial cultures were all sterile, including the blood and

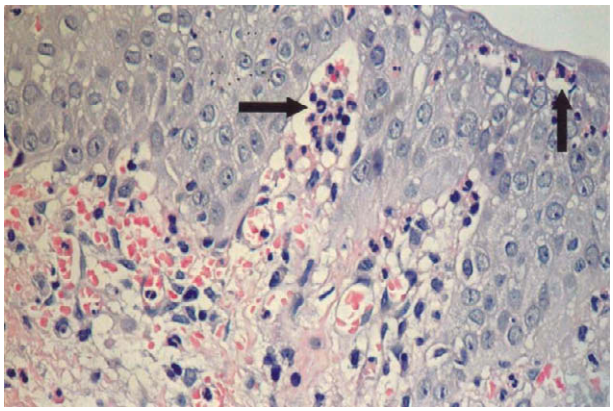

Figure 3 Neutrophil infiltrations in intracorneal and subcorneal layers (black arrows).

pus cultures. Findings from the viral culture of vesicular fluid were also negative. A skin biopsy was then carried out. Two pieces of specimens were obtained: one was fixed in formalin and sent for examination using Wright's stain, and the other fresh specimen was sent for direct immunofluorescence testing. Microscopically, no deposits of IgA, IgG, and C3 were observed, and the vesicles consisted of intracorneal and subcorneal aggregates of neutrophils (Figure 3), which was consistent with TNPM. The pustules ruptured and gradually faded by day 7, leaving a few hyperpigmented macules and collarettes on the forehead. The baby was discharged on day 13 with normal activity and feeding. She was regularly followed-up at our out-patient department; her body was free from skin lesions at 2 and 5 months old.

3. Discussion

TNPM was first reported and described by Ramamurthy et al in 1976.[3] The incidence varies from 4.4% in black infants and 0.6% in white infants[2] to an overall incidence of 0.2% among 662 babies,[4] and there is no sex predilection.[3] In Taiwan, only two cases have been reported.[5,6] TNPM is characterized by small pustules on a nonerythematous base. These pustules rupture and pigmented macules develop with surrounding collarettes of scales, and they may persist for weeks to months.[1,2] The vesicles are mostly located over the chin, forehead, neck, lower back and shin, but occasionally, palms and soles may be involved.[3] No systemic manifestations have been reported.

The diagnosis of TNPM is usually based upon clinical and histopathological findings, and the etiology remains unknown. There is no correlation with maternal infection or drug exposure.[3] The typical histological findings include intracorneal or subcorneal

separation, keratinous debris, and neutrophil and eosinophil infiltrations.[7,8]

Skin lesions in neonates can have various presentations such as papules, plaques, pustules, and vesicles, but the most common are vesiculopustular lesions, which can be the presenting features of infectious, inflammatory, genetic, or transient neonatal disorders.[2] Infectious diseases such as impetigo, candidiasis, varicella, syphilis and herpes simplex infection should all be taken into consideration before a noninfectious diagnosis is made. In our patient, oxacillin and gentamicin were administered before the results of the cultures were known, and acyclovir was added in case of herpes and varicella infection 3 days after birth. All antibiotics were discontinued when there was no evidence of infection. The erythematous macules surrounded by scaly collarettes, which were found just after the patient's birth, suggested that vesicles ruptured in the uterus before delivery, a finding that has not been described in previous reports.[5,6]

In conclusion, TNPM is a self-limited disease in newborns, and no treatment is required. To alleviate the anxiety of family, they need to be reassured about the benign nature of the illness. The appearance of pustules after birth can suggest infection, and unnecessary intravenous antibiotics are unavoidable. Although TNPM is rare in Taiwan and Asian countries, it should always be considered when pustulosis is found in the neonatal period, and dermatological consultation and histological evidence are sometimes required for the final diagnosis.

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