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CASE STUDY

TRANSIENT NEONATAL PUSTULAR MELANOSIS AND ERYTHEMA TOXICUM NEONATORUM: BENINGN SEPERATE NEWBORN ILLNESS

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ABSTRACT

Transient neonatal pustular melanosis TNPM and Erythema Toxicum Neonatorum ETN are benign dermatosis with vesiculopustular erruptionsoccurring in the neonatal period. On the basis of overlapping clinical and microscopic staining of lesions, few authors suggested that clear cut distinction could not be made between TNPM and ETN. In our case both occurred separately, as TNPM was followed by ETN.

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INTRODUCTION

The important differential diagnosis of neonatal vesiculopustular eruptions are congenital sysphilis, herpes simplex virus, candidiasis, scabies, infantile acropustulosis, erythema toxicum neonatorum, transient pustular melanosis, pustular psoriasis or eosinophilic pustulosis. Most common among these are TNPM and ETN eruptions. Clear cut differentiation between these is not always possible. Presence at birth, different clinical presentation and simple lab investigation has been considered useful to differentiate the two diseases. (Ramamurthy *et al*., 1976) Although these entities occurs independently but may coexist also. This case report presents the clinical and laboratory staining picture of TNPM followed by ETN.

Case report

A dermatological opinion was asked to evaluate cutaneous eruptions in a full term newborn healthy boy delivered by vaginal route. All three trimesters were uneventful. On physical examination, baby was comfortable, afebrile and with no lymphadenopathy. We observed numerous, discrete, 1-3mm pustules on normal looking skin located on forehead, scalp, trunk and proximal extremities. (Fig. 1) Some of the lesions no longer contained pus then presented as collarette of scale and few brownish hyperpigmented macules. (Fig. 2) Gram staining of pustules showed numerous neutrophils but no bacteria, ruling out bacterial infection such as Staphylococcus, Streptococcus species. Routine blood investigations were normal. Serological examination of Syphilis and TORCH infection were negative. Tzanck smear and KOH mounts from skin lesions were negative for acantholytic cells and pseudohyphae ruling out Herpes and Candida infection respectively. Perinatal history was normal and there was no sign of varicella or other infection. Family history of hereditary and systemic diseases was negative. On the basis of clinical features and gram's staining, a diagnosis of TNPM was made. On day third of life, patient developed several papulo-pustular lesions with surrounding erythema consistent with presentation of ETN. On doing Gram's staining from four different lesions, smear showed abundant eosinophils. Baby's parents were reassured about the benign nature of these lesions. No active

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treatment was given. On follow up after 3 weeks, he was free from skin lesions except few brownish macules on trunk proving its benign non toxic nature.

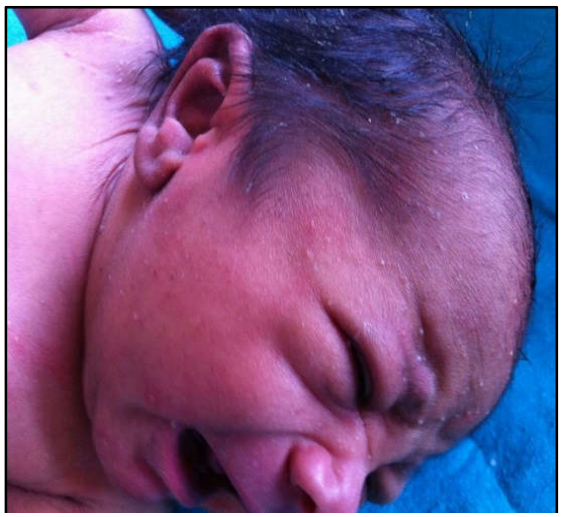

Fig. 1. On day 1; multiple, dicrete, pustules on non erythematous base over face and forehead

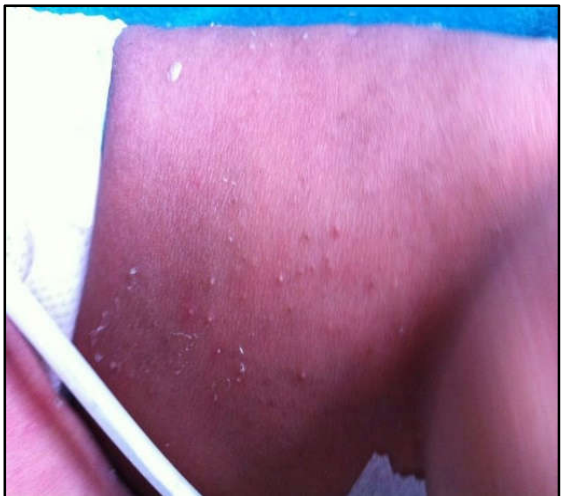

Fig. 2. Collarette of scale and few brownish hyperpigmented macules

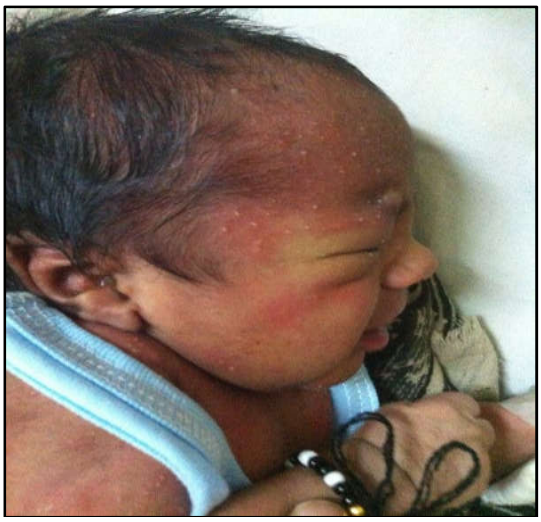

Fig. 3. On day 3; pustular lesions on erythematous base

DISCUSSION

TNPM and ETN are non infectious, innocuous, sterile and self-limiting conditions. TNPM was first described in 1961, which was then called 'lentiginesneonatorum.' It occurs in 4% of newborn particularly in black male infants. (Ramamurthy *et al*., 1976) Unlike ETN, lesions are always present at birth. It has three phases. In first phase, very superficial vesicopustules, of size 2-10mmon non-erythematous base are seen followed by second phase of collarette of scale around the resolving pustule and later on leaving behind brownish hyperpigmented macules at the previous site of pustulationi.e third phase. (Lucky 3rd edition) On first and second day of birth of our patient, first and second phases of the TNPM are seen respectively. (Fig. 1 and Fig. 2) The most common location for the TNPM has been on the forehead, under the chin, at the nape and upper trunk. ETN is also a benign, self limiting condition occurring more frequently than TNPM, seen in upto 50% of full term infants of all racial types. (Nanda *et al*., 1989) It usually occurs after 24-48 hours of birth. It can occur per se or sometimes co-exist with TNPM. Clinically it begins with 2-3mm diameter, multiple, erythematous, blotchy macules and papules, which may evolve over several hours into pustules giving infants a 'flea-bitten' appearance which usually fades over 5-7 days. (Lucky 3rd edition) Sites are usually face, trunk and proximal extremities although palms and soles are rarely involved. In ETN, Wright's stain of pustule contents reveals sheets of eosinophils and occasional neutrophils whereas in TNPM numerous neutrophils and rarely eosinophils are seen. (Eichenfield 4th edition) From the clinical and Wright/Gram's staining point of view our patient on first day fulfilled the criteria for TNPM whereas on 3rd and 4th day eruptions were consistent with the characteristic of ETN. So these occurred as different entities in our case while in previous case reports investigators have doubted these as same. (Ferrándiz *et al*., 1992) Theetiology of both conditions remains unknown. It has been suggested that TNPM and ETN represents the different phases of the same diseases, representing the reactive process resulting from the action of same unknown factors on the fetal (TNPM) or the neonate skin (ETN). (Ferrándiz *et al*., 1992) Infectious diseases such as impetigo, candidiasis, varicella, syphilis and herpes simplex infection should all be taken into consideration before a noninfectious diagnosis is made. Gram staining and bacterial culture helps to differentiate from bacterial causes, positive potassium hydroxide preparation and viral serology can be done to rule out candida and virus infection respectively. Acropustulosis of infancy, Incontinentia Pigmentosa (IP) and miliriaprofunda are the non-infectious differentials of TNPM and ETN. Acropustulosis of infancy has characteristic acral distribution and found between the age of 2-10 months. Lesions of IP are vesicular, linear in pattern, almost exclusively seen in female patients whereas in Miliria Profundapapular, vesicular and pustular lesions seen predominantly over trunk and extremities, rarely at birth.

Conclusion

Benign skin conditions are prevelant in newborns with similar presentation but a careful history and investigation can help to differentiate them and better explain the prognosis to the parents.

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