Erythema Toxicum Neonatorum

Synonyms: erythema neonatorum allergicum; toxic erythema of the newborn

Description[1]

**Erythema toxicum neonatorum** (ETN) only occurs in the newborn. It has the appearance of small, erythematous papules and vesicles. Occasionally pustules also occur. The lesions are often surrounded by areas of diffuse blotchy erythema, giving the appearance of a distinct halo. Individual lesions are quite transient and usually disappear quickly, only to be replaced by others in different parts of the body. The condition is benign, causes no symptoms and resolves spontaneously.

Pathophysiology

The condition has been known throughout the ages and was described by ancient Mesopotamian physicians[2]. The exact cause is not known but some authorities have attributed it to an allergy because of the prominence of eosinophils within the lesions. Some popular theories include:

- An immune system reaction involving hair follicles (the condition normally occurs on hair-bearing areas and clusters of mast cells can be seen around hair follicles)[3].
- An innate immune response against commensal colonisation by organisms such as Group B streptococcus[4].
- Over-expression of high mobility group box chromosomal protein 1 (HMGP-1), a proinflammatory cytokine released by macrophages and keratinocytes[4].
- A transient adjustment reaction of the newborn skin to mechanical or thermal stimulation[2].

Epidemiology

A Spanish study reported a prevalence of 16.7%[5], a Turkish study reported a prevalence of 13%[6] and an Indian study 23%[7]. There is considerable geographical variation. A Chinese study estimated prevalence to be about 44%[8].

Risk factors

Studies have identified the following risk factors[5, 8]:

- Caucasian race.
- Higher birth weight.
- Greater gestational age.
- Maternal age less than 30 years.
- Term birth.
- The birth season (higher in summer and autumn).
- Feeding with milk powder substitute or a mixed diet.
- The length of labour in vaginal delivery.

Some studies suggest it is more common in male infants and in babies born to women who have had two or fewer pregnancies; however, other studies have contradicted these findings.

Presentation[8]

The typical rash appears in newborns between the ages of 3 days to 2 weeks. Rarely, it can occur within the first 48 hours. The transience of the lesions is characteristic; they can appear or disappear within minutes to hours.

The lesions most commonly start on the trunk and involve the buttocks and proximal parts of the limbs[5]. The face can also become involved[1].

Differential diagnosis[1, 8]

- Herpes simplex virus infection
- Impetigo
- Listeriosis
- Neonatal sepsis
- Varicella
- Milia
- Miliaria
- Folliculitis
Investigations\[1\]

- The characteristic appearance of the lesions, their fleeting nature and the lack of systemic features make the condition fairly easy to diagnose clinically.
- If the clinical picture is atypical, material taken from a pustule should be examined to exclude bacterial, viral and fungal infections.
- A peripheral blood film may show eosinophilia.
- If systemic sepsis is suspected, blood cultures should be taken to exclude Group B streptococcus, *Listeria* spp., *Escherichia coli* and other pathogens.
- If necessary, a skin biopsy should be taken. Typically, there is accumulation of primary eosinophils. Other features may be neutrophils in the follicular epithelium, hyperkeratosis and follicular plugging.

Management\[2\]

The condition is self-limiting and requires no treatment. Parents should be reassured about this but advised to report any atypical features.

Complications\[2\]

No complications occur. Despite the presence of eosinophils within the lesions, no links to atopic conditions have been established.

Prognosis\[2\]

Full resolution is expected within two weeks of onset. 11% of patients develop a recurrence six weeks later.

Further reading & references


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