UNILATERAL ERYTHEMA NODOSUM IN A 17-YEAR-OLD GIRL

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Abbreviation **EN** = erythema nodosum.

Case report. A 17-year-old girl, with a medical history of atopic dermatitis, presented to the emergency department with painful erythematous nodules on the anterior surface of her left leg, associated with atopic dermatitis lesions in the left popliteal region. She was afebrile and had no history of local trauma. She was initially treated with flucloxacillin after a diagnosis of cellulitis, but was subsequently admitted for intravenous antibiotic therapy due to lack of improvement with oral treatment.

After failure to improve under antibiotics, the diagnosis of unilateral erythema nodosum was considered. Further investigations revealed an antistreptolysin O titer of 590 IU/mL (normal range 0–150) and normal results for infectious (including HCV, HIV, HAV, Mantoux, stool parasites, and cultures) and immunological studies, and for chest and left leg X-rays; ultrasound of the leg showed subcutaneous tissue thickening.

Dermatology consultation confirmed the suspected diagnosis of unilateral erythema nodosum. The patient completed a 2-week course of nonsteroidal anti-inflammatory therapy. The lesions resolved after 8 weeks.

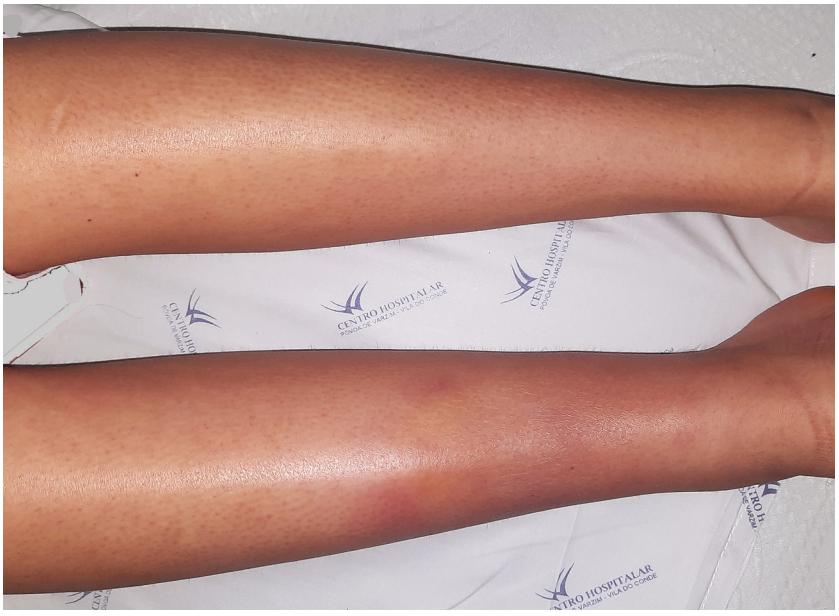

Fig. 1: Unilateral erythema nodosum in a 17-year-old girl.

Discussion. Erythema nodosum (EN) is the most common form of panniculitis, an inflammation of subcutaneous fat (1). It is more frequent in women in their third and fourth decades of life (2). The pathogenesis of EN is not yet fully understood but is believed to be related to a delayed hypersensitivity response to various antigenic stimuli. It occurs as a consequence of a delayed-type hypersensitivity reaction (3) to drugs, infections, pregnancy, inflammatory diseases, and malignancy (1). The presence of circulating immune complexes in some secondary forms, such as those associated with inflammatory bowel disease (4), suggests the involvement of both immune-complex-mediated and T-cell-mediated (type IV) mechanisms (5). Endothelial adhesion molecule activation and inflammatory mediators also appear to contribute to the disease process (6).

EN typically presents with bilateral, erythematous, non-ulcerated nodules on the extensor surfaces of the legs, which tend to resolve spontaneously within 3-8 weeks (1). The appearance of the skin lesions changes over time: initially they are more erythematous and painful, later becoming violaceous and non-painful (1). Other sites, including the arms, trunk, and face, may also be affected (1, 3).

In children, EN is rare but remains the most common type of panniculitis in the pediatric age group (7). Symptoms such as fever, malaise, and arthralgia may accompany the skin lesions (1). The etiology is idiopathic in 23-55% of pediatric cases, while in 47-77% it is associated with underlying conditions, most commonly infections, but also autoimmune diseases, medications, vaccines, and malignancy (7). Streptococcal infection is a frequent trigger, as EN typically occurs two to three weeks after a throat infection (3). Atypical presentations of EN, such as unilateral cases in pediatric patients, are exceedingly rare. Only one other case of unilateral EN in a child has been reported, also associated with a probable streptococcal infection (8). Other unusual localizations include plantar lesions, as reported in two children, highlighting the broad clinical spectrum of EN (9).

Diagnosis is primarily clinical and based on a thorough history and physical examination, supported by laboratory and imaging studies that help differentiate EN from similar conditions (1, 3). Recommended investigations include complete blood count, inflammatory markers, throat swab culture, antistreptolysin O titers, Mantoux testing, and chest radiography to exclude tuberculosis or sarcoidosis (10). In doubtful cases, a deep incisional biopsy may be required, typically showing septal panniculitis without vasculitis, often with characteristic radial granulomas (10).

Management focuses on treating the underlying cause and providing symptomatic relief (1). Supportive measures include bed rest, leg elevation, and cold compresses, while nonsteroidal anti-inflammatory drugs remain the mainstay of symptomatic treatment (10). In refractory or severe cases, potassium iodide, systemic corticosteroids, colchicine, dapsone, hydroxychloroquine, or immunosuppressive therapy may be considered (7, 10).

In the present case, unilateral EN was diagnosed in an adolescent after poor response to antibiotics, supported by elevated antistreptolysin O titers titers. This case highlights the importance of considering atypical presentations, conducting a systematic evaluation to exclude serious underlying disease, and recognizing the self-limited nature of EN while providing appropriate symptomatic therapy.

Conclusion. This case emphasizes a rare unilateral presentation of erythema nodosum in pediatric age, underlining the importance of recognizing atypical patterns of this condition.

Conflicts of interest

The authors declare that they have no conflicts of interest.

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