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CASE REPORT

## Erythema nodosum for injectable contraceptive in Pediatrics

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### Abstract

**Introduction:** Erythema nodosum (EN) is panniculitis without vasculitis, characterized by inflammatory cutaneous nodules with predominance in the pre-tibial region, results of an inflammation due to a delayed hypersensitive reaction to systemic diseases or drugs, may have associated systemic disease. **Objective:** We report a case of EN in adolescents whose suspected etiology was the use of combined injectable hormonal contraceptives. **Case Report:** Female patient, 12 years old, admitted with classic erythema nodosum, with a nodular inflammatory and symmetrical lesions on the front of the legs and systemic signs such as fever and myalgia. After hospitalization for etiologic investigation, the suspicion of EN was raised due to the use of combined injectable contraceptives in the last two months, and it evolved to spontaneous cure after about 8 weeks with only use of symptomatic drugs and contraceptive suspension. **Conclusion:** The role of estrogen in the pathophysiology of this case of erythema nodosum is not well established, but contraceptives should be considered as a possible cause for erythema nodosum in the case of female adolescents after the onset of active sexual life, after excluding other causes.

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## INTRODUCTION

Erythema nodosum (EN) is a septal panniculitis without vasculitis, initially characterized by inflammatory, erythematous, painful, warm to the touch, non-ulcerated and symmetric skin nodules, predominant in the pretibial region. The lesions arise as a result of a delayed hypersensitivity reaction (type IV) to systemic diseases or drugs. The lesions may last from 4 to 8 weeks, but a residual bluish color may persist for months.<sup>1</sup>

It is a relatively rare disease, occurring in approximately 1 to 5/10,000 people. In adults it is more common in women than men, in a ratio of 6: 1; in children, it is 1: 1 until puberty.<sup>2</sup>

The diagnosis is clinical, and biopsy should be performed as a complementary exam, especially in cases of diagnostic uncertainty and atypical presentations. In order to avoid relapses, the etiology should be investigated, although it is idiopathic in about 55%.<sup>2</sup> Among the main causes, there are several infections (especially streptococcal infections between 28 and 48% of the cases, tuberculosis, leprosy), drugs (sulfonamides, amoxicillin and oral contraceptives), pregnancy, sarcoidosis and inflammatory bowel disease.<sup>2,3</sup>

## OBJECTIVE

To describe the clinical case of a patient hospitalized in a public hospital in Macaé, who developed Erythema Nodosum after starting to use injectable contraceptive agents.

## CASE REPORT

A 12-year old, black, previously healthy female patient, sought emergency services with a history of erythematous lesions in the lower limbs, associated with pain, heat and pruritus, with a feverish peak on the second day of illness (38°C).

It evolved with more and enlarged lesions, as well as allodynia and pain-related lameness, without other complaints. She was admitted for investigation. In the anamnesis she had no relevant medical history, except for a recent history of the first sexual activity (three months ago with a partner, using a condom) and introduction of monthly injectable contraceptive by gynecologist, started two months ago. Of relevant family history, her grandmother was diagnosed with tuberculosis and was treated nine years ago.

On examination, the patient had bilateral erythematous-violaceous lesions, predominantly in the pretibial region, some coalescent of difficult outlining, ranging in size from 1.0cm to 4.0cm in diameter and local hyperthermia. No lesions were seen on the back of the legs or other parts of the body (Figs. 2 and 3). Other segments had no changes.

Complementary tests were performed, which showed elevation of inflammatory test enzymes (CRP and HSV), ASLO negative, negative serologies and chest X-ray without alterations. The patient evolved with less pain and inflammatory process improvements with the use of symptomatic medication, being discharged with a recommendation to suspend the contraceptive, which by exclusion was considered the probable cause of the erythema nodosum, in addition to return for follow-up with the pediatrics and gynecology teams, to evaluate the use of another contraceptive method.

## DISCUSSION

EN is a clinical syndrome that occurs with the appearance of nodular, painful, erythematous, erythematous lesions distributed in the lower limbs, predominantly in the extensor sides, particularly in the legs. Systemic symptoms such as fever, asthenia, arthralgia and malaise may occur. EN is generally



Figures 1-2. Anterior surface of the lower limbs upon admission.



**Figure 3.** Posterior surface of the lower limbs upon admission.

idiopathic, but there are many possible causes, and physicians should consider the possible etiologies when approaching the patient, and for that purpose a comprehensive anamnesis, complete physical examination, and follow-up examinations are required. The patient presented characteristic lesions on the extensor face of the legs, as well as systemic symptoms compatible with EN. The biopsy of the lesion was not performed, as it is a clinical diagnosis and should be considered in atypical examinations or diagnostic suspicion, due to the benign and self-limited nature of the lesions; if the biopsy is performed, it should be incisional or deep excisional in order to provide adequate sampling for lesion evaluation, demonstrating a septal panniculitis upon histopathology, without the presence of vaculitis.<sup>2</sup>

The diagnosis of EN caused by contraceptives is made through anamnesis, in which the lesions appear with the use

of the medication and then disappears upon drug discontinuation, after exclusion of other possible etiologies<sup>4</sup>, in the present case, we noticed that the patient did not present any underlying disease that justified the appearance of the lesions, and although the causes of the infections described are the most frequent, especially *Streptococcus pyogenes*, they were discarded after a thorough clinical history, physical examination and supplementary tests, and the only risk factor found was the monthly use of injectable hormonal contraceptive after the onset of sexual activities.

Estrogen is implicated in the occurrence of erythema nodosum, included as a possible justification for the higher frequency of EN in women than in men (6: 1). No study was found in the literature on combined injectable and intravenous contraceptives, but there is evidence that the combination of estrogen and progesterone in oral contraceptives has been associated with EN for decades, as has hormone therapy.<sup>2</sup>

Another important point to notice in this report is the need for a differentiated approach concerning the adolescent-pediatric patient, some particularities that must be taken into account are the early initiation of sexual intercourse, the disregard for condom use, the introduction of contraceptives, partner variability and the use of illicit drugs.<sup>5</sup> It is important to screen for risk behavior and potential sexually transmitted diseases, since this is a time for self-affirmation, new experiences and definition of one's sexual identity.

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