

# The morning after rash: Erythema nodosum due to emergency contraception

Charlotte Andrews, Jacob Mathew

## CASE REPORT

A 19-year-old Caucasian female in the United States Army with an unrevealing past medical history presented due to the sudden onset of painful nodules and bruising to her on shins that developed upon awakening two days ago. She denies recent trauma to the area. No recent upper respiratory infections. No family history of sarcoidosis, rheumatoid arthritis, or other autoimmune conditions. She described the pain as a burning sensation. She denies spread of the lesions since they first appeared. She denies a history of similar symptoms in the past. She does not take any chronic medications but does admit to taking a form of emergency contraception after unprotected sexual intercourse, approximately one week prior to their appearance. Denies any joint pains. On physical examination, vitals were stable with no evidence of fever. The patient was in no acute distress. Cardiopulmonary examination was unremarkable. Skin examination revealed ill-defined symmetric subcutaneous nodules, approximately 4–5 cm in size, with bruising on the anterior shins bilaterally (Figures 1 and 2). Examination of the ankles, knees, elbows, and fingers bilaterally showed no evidence of synovitis. Elevated Sedimentation Rate (ESR) was 37 mm/hr (normal range for women 0–29 mm/hr). Erythema nodosum (EN) was highest on the differential diagnosis, and the patient was referred to Dermatology for clinical confirmation of the diagnosis. Given its



Figure 1: Patient presentation in clinic with erythematous painful nodules noted on the anterior shins.



Figure 2: Lateral view of painful nodules in patient.

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appearance, Dermatology confirmed the diagnosis, and biopsy was not pursued. She was prescribed a prednisone taper of 20mg for 21 days. Upon follow up a month later, her symptoms had mostly resolved as seen in attached figures (Figures 3 and 4).

## DISCUSSION

Erythema nodosum is a form of panniculitis, more commonly seen in females, that can be associated with a wide breadth of conditions (Table 1). Oral contraceptives, as well as many other conditions, have been associated with erythema nodosum [1, 2]. EN often produces painful ill-defined symmetric subcutaneous nodules, often 1–6 cm in diameter, in areas such as the face, neck, trunk or arms but most commonly seen in the anterior surface of the lower extremities [3–6]. The nodules will often regress to bruises and ultimately will disappear without bruising in 1–2 months [3]. In rare cases, the

Table 1: Common causes of Erythema Nodosum

Cause	Incidence Rate	Description
<b>Infections</b>	28–48%	Streptococcal infections most common; also common in Yersinia spp., Mycoplasma, Chlamydia, Histoplasma
<b>Sarcoidosis</b>	11–25%	Second most common cause of EN; dermatologic manifestations seen in quarter of patients
<b>Drug-associated</b>	3–10%	Common associations include oral contraceptives, non-steroidal anti-inflammatories, antibiotics, and leukotriene-modifying agents
<b>Pregnancy</b>	2–5%	Likely due to association with sex hormones albeit exact association is unknown—higher estrogen contents in contraceptive pills may increase likelihood of manifestation
<b>Enteropathies</b>	1–4%	May be associated with inflammatory bowel disease due to association with T-cell immune response to intestinal bacteria



Figure 3: Presentation of symptoms mostly resolved three weeks later.



Figure 4: Lateral view of resolved symptoms.

dermatologic manifestations may be associated with systemic symptoms of fevers, malaise, and joint pains [6]. EN may be a sign of an underlying medical condition such as inflammatory bowel disease, sarcoidosis, malignancy, specific bacterial infections, or from medications such as oral contraceptives, sulphonamides or bromides [7]. Table 1 shows common causes of Erythema nodosum [4, 6, 7]. Despite the large differential, malignancy must always be considered as a potential cause. A paraneoplastic presentation can be seen with Non-Hodgkin’s lymphoma, Hodgkin’s lymphoma, and leukemia [6]. Diagnosis can often be made solely on patient history and physical examination. Dermatologic exam often reveals an acute onset of tender nodules on the bilateral shins. Biopsy can be considered if an atypical site is involved (ie. arms, chest) or atypical features are encountered such as ulceration or abnormally large size (>5 cm). Typically labs are not necessary unless they may assist in the diagnosis of the culprit disease (i.e. chest radiograph for sarcoidosis, ESR or C-RP for inflammatory bowel disease). Treatment is often conservative and involves raising the legs, rest, anti-inflammatories, and systemic glucocorticoids, if rapid treatment is desired.

**CONCLUSION**

Erythema nodosum is a dermatologic condition that may present with nodular erythematous eruptions that is usually limited to the extensor aspects of the extremities in patients secondary to a wide array of potential conditions as well as secondary to medications. Oral contraceptives are a known, but not commonly considered cause, of EN, and should be considered in the differential in age-appropriate females presenting in the right clinical scenario with painful nodules and bruising to the lower extremities. Treatment is often conservative, however, in severe cases, prednisone can be used.

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**Author Contributions**

Charlotte Andrews – Acquisition of data, Revising it critically for important intellectual content, Final approval of the version to be published

Jacob Mathew – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

**Guarantor of Submission**

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**Consent Statement**

Written informed consent was obtained from the patient for publication of this clinical image.

**Conflict of Interest**

This article was prepared or accomplished by Charlotte Andrews and Jacob Mathew in their personal capacity. The opinions expressed in this article are the author's own and do not reflect the view of the United States Army, the Department of Defense, or the United States government. Neither author has any conflicts of interest to report.

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