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Case Presentation

A case of bullous erythema ab igne accompanied by anemia and subclinical hypothyroidism

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Abstract

Erythema ab igne (EAI) is a dermatosis characterised by reticulate red-brown pigmentation and telengiectasia resulting from long-term exposure to infrared radiation. It generally occurs in individuals using heating devices in the winter, those who frequently use hot compresses, and those who prefer hot environments. It generally occurs on the feet of women but may also occur on the hips and thighs. A 42-year-old male presented with red-brown spots and blisters on both thighs and behind the legs. He was diagnosed with EAI based on the clinical, historical, and histopathological features presented. Herein we present a case of bullous EAI associated with normochromic normocytic anemia and subclinical hypothyroidism.

Keywords: Bullous erythema ab igne, hypothyroidism, hypothermia

Case synopsis

A 42-year old man presented with red-brown spots and blisters on both thighs and behind the legs. He reported a mild burning sensation, especially in the areas with blisters. The patient reported using a wood stove at home for approximately 2 months. Recently, he had tried to get warm by turning his back to the stove from a close distance. The dermatological examination revealed red-brown reticulate patches and plaques with blurry margins and a couple of bullous lesions (maximum diameter: 5 cm) on both legs and the flexor sides of the thighs (Figure 1,2). Laboratory testing was unremarkable, except for a mild anemia (hemoglobin 9.8 gm% normocytic normochromic) and subclinical hypothyroidism (TSH serum level 10.1 mIU/L; normal range: 0.3-4 mIU/L) with normal serum FT3 (4.2 pg/mL; normal range: 1.6-5 pg/mL) and FT4 (1.4 ng/dL; normal range: 0.8-2 ng/dL).

Dermoscopic examination of the lesions revealed homogenous red-brown pigmentation and erythematous areas surrounding these pigmented macules. Histopathological examination of the biopsy material from the lesion areas (including the bullous lesion) revealed subepidermal separation and mild superficial perivascular lymphocytic infiltration in the dermis. The patient was diagnosed with the bullous form of EAI. The patient was educated about the disease and advised to stay away from heat sources. The treatments for his bullous lesions and for the erythematous hyperpigmented areas were wet dressings, and topical hydroquinone, and mometazone furoate cream treatments.

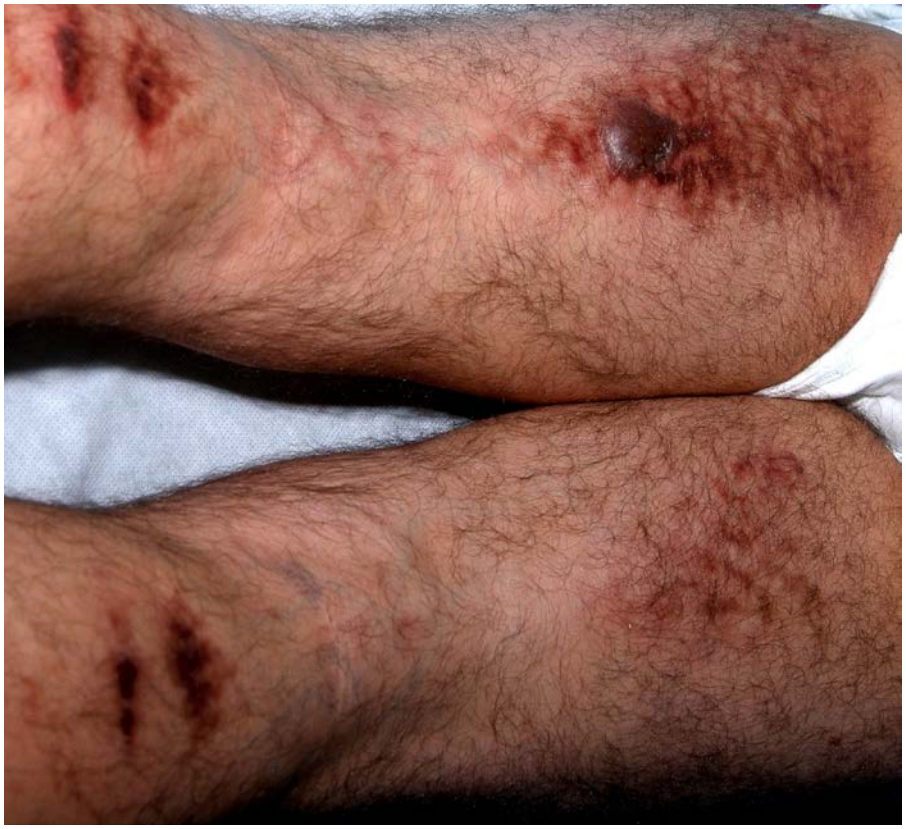

Figure 1. Reticulate hyperpigmentation and bullous lesions on dorsal surface of the lower extremities induced by repeated and prolonged exposure to heat

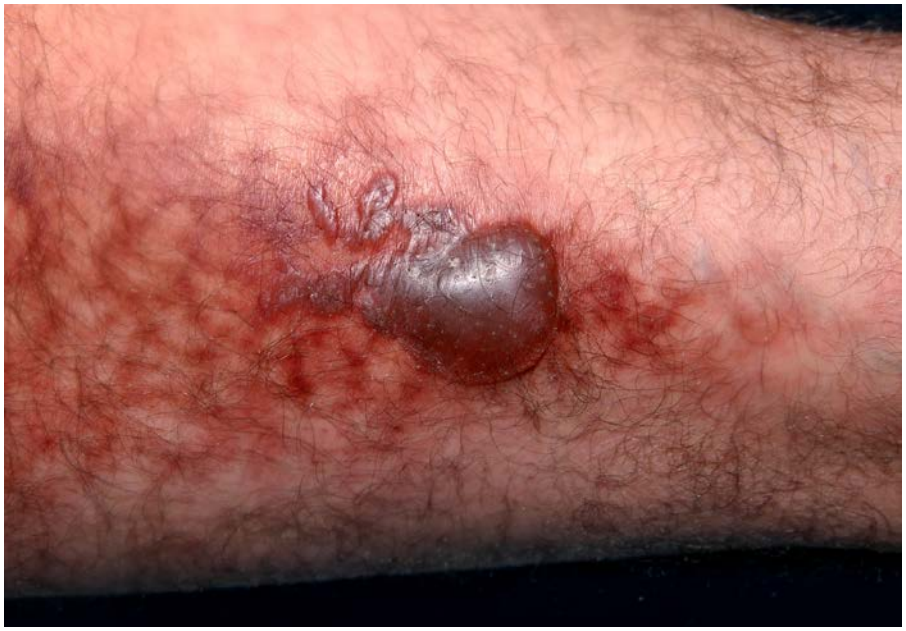

Figure 2. A bullous lesion on an erythematous base on the dorsal thighs

Discussion

Erythema ab igne (EAI) is a pigmented dermatosis resulting from close proximity to various heaters such as wood stove, fireplace, or electrical heater. The condition can also manifest on the face and arms in stokers and bakers as an occupational disease [1]. EAI may also occur in the lumbar region among patients who use heating pads and hot water bottles for chronic lower back pain [2]. The condition generally occurs in individuals using hot water bottles in the winter, those who frequently use hot compresses, and those who prefer hot environments [3]. The condition is more common among women and typically occurs on the legs but may also occur on the hips and thighs. It is generally asymptomatic, but some patients report burning and itching [3]. Underlying disease can lead to various complaints [4]. The time period required for EAI development is between 2 weeks and a couple of months, depending on the severity of the heat and the duration of exposure [5]. Our patient had been using a wood stove at home for two months. Recently, the patient had been trying to get warm by turning his back to the stove from a close distance. EAI lesions developed subsequently. The initial EAI lesion generally occurs in the area exposed to heat. If the heat exposure continues, the skin reaction becomes erythematous and hyperpigmented with a reticulate pattern, which is associated with epidermal atrophy and telengiectasia [2]. Bullous lesions rarely develop on the erythematous plaques [6]. Although the lesions are benign, chronic heat exposure may lead to epidermal dysplasia and rarely to neoplasms

such as squamous cell carcinoma (SCC) or Merkel cell carcinoma [7, 8]. Because reticulate color changes are characteristic of EAI, the condition must be differentiated from thrombosis, vascular spasm, and vasculitis, which may have a similar appearance [1]. In these types of situations, a detailed patient history may reveal heat exposure and help in the diagnosis of EAI. Although uncommon, systemic disease leading to hypothermia may be detected in cases with EAI [9]. In our case, the hypothermia observed may have resulted from moderate anemia and subclinical hypothyroidism. With this case report, we hope to show that patients with EAI should be carefully investigated for internal pathologies leading to hypothermia.

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