

QUIZ SECTION

Asymptomatic Brownish Reticulate Patch on the Left Thigh: A Quiz

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A healthy 29-year-old woman presented with an asymptomatic, mildly erythematous to brownish reticulate patch, which had been present for a few months, on the anterior face of her left thigh (Fig. 1). The lesion was fixed, and was not blanchable, tender or migrating.

The patient denied any contact with chemicals, acute thermal exposure or repeated frictional trauma. She reported that the lesion had developed within a few months after she had started using a laptop computer for working on her thesis. No laboratory abnormalities were found. Histological investigations were not performed.

What is your diagnosis? See page 557 for answer.

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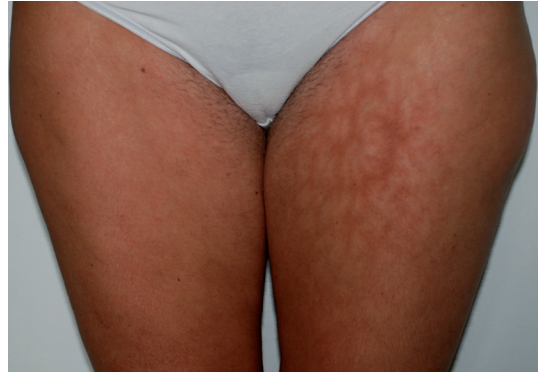


Fig. 1. A brownish-red reticulate patch on the anterior face of the left thigh.

ANSWERS TO QUIZ

Asymptomatic Brownish Reticulate Patch on the Left Thigh: Comment

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Diagnosis: Erythema ab igne caused by use of a laptop computer on the lap.

Erythema ab igne (EAI) is a well-known adverse effect of repeated long-term exposure to mild heat in the range 43–47°C, which is insufficient to cause a burn (1, 2).

Clinically, EAI is typically characterized by the presence on the skin of an asymptomatic, fixed, non-tender, brownish-red, reticulate patch, which is variable in shape and width.

In the early stages, histopathological changes observed in EAI include epidermal atrophy, dermal pigmentation and vasodilatation. Focal hyperkeratosis and epithelial cellular atypia occur later, closely resembling the changes induced by actinic damage (3). Melanocytes with increased dendritic processes and abundant melanophages are present in the dermis. There may also be an accumulation of dermal elastic tissue, which is an early sign of both ultraviolet (UV) radiation and heat-induced skin damage (4). The similarities between EAI and actinic keratoses suggest that heat may induce epithelial changes as a result of clonal mutation in the same way that UV light produces epithelial changes (5).

Squamous cell carcinoma and neuroendocrine carcinoma, also known as Merkel cell carcinoma, may arise in the site of EAI on rare occasions (1, 5). The most common thermally induced cancer, squamous cell carcinoma, tends to occur after a period of more than 30 years (4, 6).

The most important differential diagnosis is between EAI and livedo reticularis, but there are significant clinical and anamnestic differences. A biopsy should be performed if there is any evidence of cutaneous malignancy or in cases of diagnostic doubt.

In the past, EAI was usually seen on localized areas of the body that were closely and repeatedly exposed to heat, normally from fireplaces, braziers, wood-burning stoves, steam radiators and space heaters (2, 5). Since the widespread availability of central heating the incidence of EAI has decreased (6), but new and often unusual causes have been described in the literature. These include hot water bottles and heating pads used to treat stomach-ache, muscular and arthritic pain, or various other chronic pains (4), furniture with a built-in heating unit (7), heating blankets (8), car heaters (9), hot bathing (2), heated popcorn (10) and a sauna belt system used to treat abdominal obesity and cellulite (11).

Several cases of EAI induced by laptops have been reported to date since the first publication in 2004 (12). This number is likely to increase with time, as laptops are used increasingly (5, 6, 12–14). In this case, the heat source causing EAI is the battery in the base of the laptop and the classical skin area involved is the thighs. EAI therefore may become an occupational hazard not only for bakers, foundry workers and kitchen workers, but also for people

working with their laptops on their thighs (4, 14). A further problem for laptop users is the risk of a negative influence on fertility (15).

The mainstay of treatment of EAI is immediately to remove the source of infrared radiation; in which case the prognosis of EAI is excellent (4, 6, 14). Residual hypo- or hyper-pigmentation may be observed, especially in dark skin types.

In the present case the patient reported that she worked every day with the laptop placed directly on her thighs for at least 3–4 h. The unilaterality of the lesion on the left thigh is explained by the location of the battery on the bottom left-hand side of the laptop, which is subjected to warming. The patient was instructed to avoid direct contact with the laptop or to use an insulating material between her skin and the computer. After 3 months the patch of EAI was significantly improved.

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