Reticulated Hyperpigmentation on the Knee and Thigh

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A 25-year-old woman with an unremarkable medical history presented to the dermatology clinic for evaluation of a persistent rash on the right knee and distal thigh of several months' duration. The patient noted that the rash had been asymptomatic, and she denied any history of trauma to the area. She reported that she worked as a teacher and had repeatedly stayed up late using her laptop for months. Rather than use a desk, she often would work sitting with her laptop in her lap.

WHAT'S YOUR **DIAGNOSIS?**

a. calciphylaxis
b. cutis marmorata
c. erythema ab igne
d. livedo reticularis
e. poikiloderma of Civatte

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THE **DIAGNOSIS:** Erythema Ab Igne

The patient was diagnosed with erythema ab igne based on characteristic skin findings on physical examination along with a convincing history of chronic localized heat exposure. Erythema ab igne manifests as a persistent reticulated, erythematous, or hyperpigmented rash at sites of chronic heat exposure.[1] Commonplace items that emit heat such as electric heaters, car heaters, heating pads, hot water bottles, and, in our case, laptops also emit infrared radiation, which can lead to changes in the skin with long-term exposure.[2] Because exposure to these sources often is limited to one area of the body, erythema ab igne usually manifests locally, as exemplified in this case. Chronic heat exposure and infrared radiation from these sources are thought to induce hyperthermia below the threshold for a thermal burn, and the cutaneous findings correspond with the dermal venous plexus.[3]

Diagnosis of erythema ab igne primarily is made clinically based on characteristic skin findings and exposure history. Relevant history may include occupations with prolonged heat exposure, such as baking, silversmithing, or foundry work. Heat exposure also may result from cultural practices such as cupping with moxibustion.[4] Additionally, repeated use of heating pads or hot water bottles for pain relief by patients diagnosed with chronic pain or an underlying illness may contribute to development of erythema ab igne.[1,4]

Biopsy was not needed for diagnosis of this patient, but if the presentation is equivocal and history of potential exposures is unclear, a biopsy may be taken. A hematoxylin and eosin stain would reveal dilation of small vascular channels in the superficial dermis, contributing to the classic reticulated appearance. Biopsy findings also would reveal either an interface dermatitis or pigment incontinence containing melanin-laden macrophages correlating to either the erythema or hyperpigmentation, respectively.[4]

The prognosis for erythema ab igne is excellent, especially if diagnosed early. Treatment involves removal of the inciting heat source.[1] The discoloration may resolve within a few months to years or may persist. If the hyperpigmentation is persistent, patients may consider laser treatments or lightening agents such as topical hydroquinone or topical tretinoin.[4] However, if undiagnosed, patients may be at risk for development of a cutaneous malignancy, such as squamous cell carcinoma, Merkel cell carcinoma, poorly differentiated carcinoma, or cutaneous marginal zone lymphoma.[2,4] Malignant transformation has been reported to occur decades after the initial skin eruption, although the risk is rare[5]; however, due to this risk, patients with erythema ab igne should be followed regularly and screened for new lesions in the affected areas.

REFERENCES

1. Tan S, Bertucci V. Erythema ab igne: an old condition new again. *CMAJ*. 2000;162:77-78.
2. Miller K, Hunt R, Chu J, et al. Erythema ab igne. *Dermatol Online J*. 2011;17:28.
3. Kesty K, Feldman SR. Erythema ab igne: evolving technology, evolving presentation. *Dermatol Online J*. 2014;20:13030.
4. Harview CL, Krenitsky A. Erythema ab igne: a clinical review. *Cutis*. 2023;111:E33-E38. doi:10.12788/cutis.0771
5. Wipf AJ, Brown MR. Malignant transformation of erythema ab igne. *JAAD Case Rep*. 2022;26:85-87. doi:10.1016/j.jdcr.2022.06.018