

Side-effects to the use of laptop computers: *erythema ab igne*

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Abstract

The use of laptop computers is increasing, and many children and young adults spend hours with their laptops on their laps daily. We report a case with *erythema ab igne* on the thigh of a 17-year-old girl, induced by use of laptop computers four to five hours daily for nine months.

Case Report

The use of laptop computers has become popular over the last ten years. Computer technology is refined continuously and the need for immediate access to information from the Internet increases.

A 17-year-old girl with no past medical history presented with symptoms of burning and itching experienced on the front of the left thigh for nine months. On physical examination, there was a brown, reticular, non-blanchable *cutis marmorata* on the left anterior thigh, approximately the size of a palm (Figure 1). Blood tests including ANA screening were normal. A skin biopsy showed minimal dermal inflammation. The patient had not been exposed to heat sources, such as radiators, stoves, or hot-water bottles. On further questioning, it was found that three months before the symptoms appeared our patient purchased a laptop, which she used four to five hours daily. When asked directly, our patient remembered that the discomfort of the area often appeared when using the laptop. The laptop's battery was localized at the left side of the computer, which corresponded with the localization of the rash. The diagnosis was *erythema ab igne causae laptop*.

The temperature on the thighs was measured after our patient had been sitting with the laptop on her thighs for an hour (Figure 2). The temperature started at 27°C on both



Figure 1. *Erythema ab igne* on the left thigh.



Figure 2. Our patient in her usual working position with the laptop, while thigh temperature was being measured.

thighs, and after an hour the temperature of the left and right thighs was 38°C and 33°C, respectively.

Discussion

Erythema ab igne ("redness from fire") is seen rarely in young patients. The condition is seen usually in elderly people exposed to heating from repeated applications of heating pads or hot-water bottles. *Erythema ab igne* also occurs in cooks and bakers exposed to stoves,¹ and historically it was seen in workers shoveling hot coals. The continuous exposure to infrared radiation initially causes transient erythema, progressing to reticulate pigmentation and keratosis. These lesions can develop later into squamous cell carcinomas.²

Because *erythema ab igne* is a precancerosis in line with actinic keratoses,³ it is important to recognize this new cause of *erythema ab igne*, especially as we must expect to see it more in children in the coming years. If the heat exposure is stopped early, the prognosis is

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extremely good. *Erythema ab igne* may not be the only side-effect to the use of laptops on the thighs. Some studies suggest that the use can influence male fertility. When laptops are placed on the anterior aspects of the thighs, the scrotal temperature rises approximately three degrees after an hour, which perturbs spermatogenesis, and hence can influence male fertility.⁴

Although the name laptop invites using the computers directly on the lap, we believe it is necessary to warn about the possible side-effects, as it may cause chronic damage to the skin. Use of a protective blanket or plate is advisable.

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