



A Case of Laptop Computer-Induced Erythema Ab Igne *Dizüstü Bilgisayar Kullanımına Bağlı Erythema Ab Igne Olgusu*

Nurettin Özgür Doğan

Kocaeli University Faculty of Medicine, Department of Emergency Medicine, Kocaeli, Turkey

Abstract

Erythema ab igne, also known as toasted skin syndrome, is a skin reaction characterized by reticulate erythema, brown pigmentation, and telangiectasia. In some cases, epidermal atrophy and scaling are also identified. The condition is usually caused by prolonged exposure to a source of heat or infrared radiation. Here, we report a case of erythema ab igne associated with laptop computer use. (*The Medical Bulletin of Haseki 2014; 52: 291-2*)

Key Words: Erythema ab igne, toasted skin syndrome, emergency medicine

Özet

Aynı zamanda tost edilmiş cilt sendromu olarak da bilinen erythema ab igne; retiküler eritem, kahverengi pigmentasyon ve telenjektaziyle karakterizedir. Bu durum genellikle sıcak veya kızılötesi bir kaynağa uzamış maruziyet sonrasında gerçekleşir. Burada dizüstü bilgisayar kullanan bir hastada gelişen erythema ab igne olgusunu sunuyoruz. (*Haseki Tıp Bülteni 2014; 52: 291-2*)

Anahtar Sözcükler: Erythema ab igne, tost edilmiş cilt sendromu, acil tıp

Introduction

Dermatologic complaints are one of the common problems in emergency departments (ED). Although a considerable majority of them are easily managed with conservative strategies, some patients might ignore their complaints and present lately to ED.

Erythema ab igne, also known as toasted skin syndrome, is a skin condition that gains importance with widespread use of novel technological devices. The main manifestations of the disease are reticulated erythema and hyperpigmentation on the skin (1-3). Erythema ab igne is common in patients with a history of recurrent exposure to heat sources such as fireplaces or heating devices (4,5).

Computer technology is an integral part of modern life. Although desktop computers are more frequently used in business life, dermatologic problems due to laptop computer usage is increasing.

Case

A 34-year-old female presented to the emergency department with painless erythematous maculopapular lesions on front of her both thighs. She stated that, she worked extremely hard in the previous month with a

laptop computer (up to 10 hours a day), and therefore, she ignored seeking any medical help. In this period, she used her laptop computer on her thighs rather than on a desk or table. There was no history of medication or any herbal/illicit drug use. On physical examination, she had maculopapular rashes, which were limited to her both thighs (Figure 1). She denied having any pain or itching, however, she reported feeling diminished and web-like sensation on the lesions.

The remainder of the physical examination was normal. Laboratory studies, including complete blood count, INR level, liver and kidney function tests, were within normal ranges. She was discharged with suggestions of keeping away from laptop computer and any heat source. The laptop computer, which she used in the previous month had no fan hole at the back side. In the follow-up visit after one week, the lesions were disappeared and her complaints were completely resolved (Figure 2).

Discussion

Erythema ab igne is a dermatosis characterized by prominent reticular erythema, hyperpigmentation, and epidermal atrophy caused by prolonged and repeated

exposure to infrared radiation (1-3). The condition is usually asymptomatic but burning and itching have been reported by some patients (1). Our patient had also painless erythematous rashes and hyperpigmentation on her both thighs due to laptop computer use.

Heat transfer of a laptop computer involves two mechanisms: Firstly, laptop computers include microprocessors, which become warmer in case of excessive use of computer. Secondly, laptop ventilation fans are usually located at the back side and heated air passed through this ventilation fan. This mechanisms can be generate a temperature reaching 50 °C, which is mainly spreading from computer fan (1,3). Excessive heat transfer leads to epidermal damage to superficial blood vessels, causing deposition of hemosiderin. Beside



Figure 1. Painless maculopapular rash on front of both thighs



Figure 2. The lesions were disappeared after one week

increasing temperature, chronic exposure to submaximal heat with infrared radiation has been shown to induce dermal damage without causing significant burns (6).

In laptop computer-induced erythema ab igne; the optical drives, the battery and the ventilation fan are held responsible for reticular erythema. Reticular erythema was not prominent in our patient; this finding may be attributed to different location of fan hole on this laptop (on the front side). However, other findings including erythematous, non-vesicular, and maculopapular lesions exist with a non-reticular morphology.

In the past, erythema ab igne was commonly seen in individuals working in front of coal stoves or sitting close to a fireplace. Since the introduction of central heating systems, the condition is mostly due to heating blankets, car heaters, hot water bottles and heating pads for chronic back and abdominal pain (4,5). Recently, unintentional exposure to heat with laptop computers has been reported in a few number of case reports (1-5).

Treatment for erythema ab igne is permanent removal of heat source from the skin, there exists no specific therapy. Lesions may persist a long time if the heat source removal is delayed (1). For more severe and persistent cases, topical 5-fluorouracil cream or laser can be applied (7). In addition, there is a small risk of malignant transformation at the site of erythema ab igne. Patients with repeated and chronic exposures should be under regular control (3).

Laptops should be used on flat surfaces; contact with body surfaces may cause significant injuries including erythema ab igne. As a result of widespread use of laptop computers in daily working practice, it can be predicted that this diagnosis will likely increase in the future.

References

1. Bachmeyer C, Bensaid P, Bégon E. Laptop computer as a modern cause of erythema ab igne. *J Eur Acad Dermatol Venereol* 2009;23:736-7.
2. Fu LW, Vender R. Erythema ab igne caused by laptop computer gaming—a case report. *Int J Dermatol* 2012;51:716-7.
3. Arnold AW, Itin PH. Laptop computer-induced erythema ab igne in a child and review of the literature. *Pediatrics* 2010;126:1227-30.
4. Jagtman BA. Erythema ab igne due to a laptop computer. *Contact Dermatitis* 2004;50:105.
5. Gauglitz GG, Ruzicka T, Herzinger T. Erythema a computatro. *Case Rep Dermatol* 2013;5:111-3.
6. Botten D, Langley RG, Webb A. Academic branding: erythema ab igne and use of laptop computers. *CMAJ* 2010;182:857.
7. Kligman LH. Intensification of ultraviolet induced dermal damage by infrared radiation. *Arch Dermatol Res* 1982;272:229-38.