

CPD

An under-recognized, life-threatening complication of atopic dermatitis

C. Pagliarello,¹ S. Scrivani,¹ G. Fabrizi,² C. Feliciani¹ and S. Di Nuzzo¹

¹Section of Dermatology, Department of Medicine and Surgery, University of Parma, Parma, Italy; and ²Istituto Dermopatico dell'Immacolata, IDI IRCCS, Rome, Italy

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A 17-year-old boy was referred from the cardiac surgical ward with lesions on his face, antecubital area and neck. He had undergone cardiac surgery for a large vegetation in the left mitral valve from an infection with methicillin-resistant *Staphylococcus aureus*. Because the patient was otherwise well and other known cardiac risk factors for developing infective endocarditis (IE) had been excluded, the cardiac surgeon believed that endocarditis represented a complication of his skin condition. The skin condition had been present for some time, and had been variously diagnosed as psoriasis, seborrhoeic dermatitis, rosacea and atopic dermatitis (AD). The patient acknowledged that for this reason, he had not adhered to the prescribed topical treatments and had given up searching for a more feasible and effective therapy, in essence disregarding his problem.

On physical examination, an erythematous oozing lesion was seen on the patient's face, with further lesions on the antecubital area and neck folds with honey-coloured crusting (Figure 1a,b). The patient reported unbearable itching. The clinical findings suggested a diagnosis of impetiginized AD.

A culture sample from the skin grew *S. aureus*, showing the same antimicrobial susceptibilities as the blood culture isolate.

The patient was prescribed intravenous antihistamines and broad-spectrum antibiotics because his clinical condition contraindicated the use of steroids, and was instructed to apply emollients. The treatment resulted in marked improvement.

We carried out a review of the literature about AD complications, using the following search terms: "dermatitis, atopic" [MeSH terms] OR "dermatitis" [All

Fields] AND "atopic" [All Fields] OR "atopic dermatitis" [All Fields] OR "atopic" [All Fields] AND "dermatitis" [All Fields] AND "endocarditis" [MeSH terms] OR "endocarditis" [All Fields]. We found that only a limited number of papers have been published about IE in patients with AD, most often in general medicine or cardiac surgery journals.^{1–4} Moreover, there is no mention of a link between AD and IE in authoritative dermatology textbooks. In most cases, a link between IE and AD has been primarily reported by Japanese authors, but this association is under-reported in Europe and the USA, with two outdated case reports and a single retrospective study by Konstantinou *et al.*⁵ In the most comprehensive review involving serious complications from *S. aureus* in AD,⁶ no further cases were described and the authors referred to the aforementioned Japanese studies.

It should be noted that dermatologists sometimes have the potential to avoid painful and costly treatments, as it has been reported that a patient underwent cardiac surgery four times before the medical staff recognized uncontrolled AD as the source of the recurrent IE.³

In conclusion, we report a patient with IE presenting with impetiginized AD. Although Japanese cardiac surgeons have repeatedly warned about AD as a risk factor for IE, this relationship is largely under-recognized in western countries. It is well known that a lack of time for doctors to educate patients about the correct application of topical treatment and corticophobia cause patients to be noncompliant with treatment, and hence treatment fails. Although the exact incidence of IE among AD patients is unknown, dermatologists should be aware that uncontrolled AD can cause IE, and we think this is a valuable reason to persuade patients to continue the search for a feasible tailored therapy.

References

- 1 Fukunaga N, Okada Y, Konishi Y *et al.* Pay attention to valvular disease in the presence of atopic dermatitis. *Circ J* 2013; **77**: 1862–6.

Correspondence: Dr Calogero Pagliarello, Department of Medicine and Surgery, University of Parma, Via Gramsci 14, 43100 Parma, Italy
E-mail: calogero.pagliarello@libero.it

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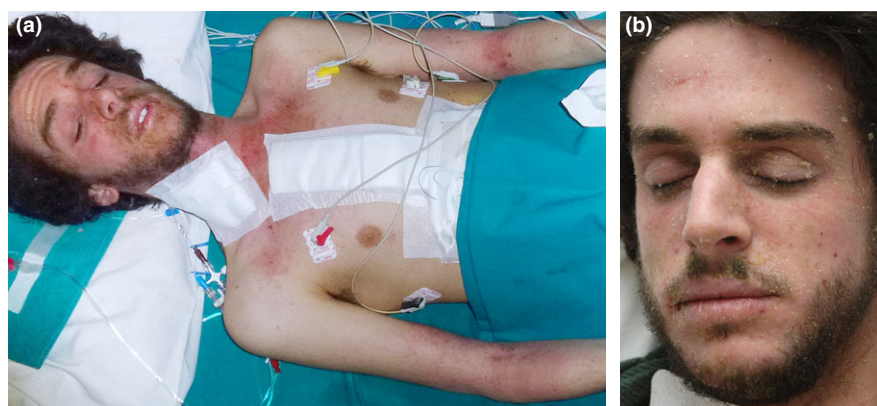


Figure 1 (a,b) Erythematous oozing lesions on the patient's face, and further lesions on the antecubital area and neck folds with honey-coloured crusting.

- 2 Fukunaga N, Yuzaki M, Shomura Y *et al.* Clinical outcomes of open heart surgery in patients with atopic dermatitis. *Asian Cardiovasc Thorac Ann* 2012; **20**: 137–40.
- 3 Yamamoto T, Yodogawa K, Wakita S *et al.* Recurrent prosthetic valve endocarditis caused by *Staphylococcus aureus* colonizing skin lesions in severe atopic dermatitis. *Intern Med* 2007; **46**: 571–3.
- 4 Onoda K, Mizutan H, Komada T *et al.* Atopic dermatitis as a risk factor for acute native valve endocarditis. *J Heart Valve Dis* 2000; **9**: 469–71.
- 5 Konstantinou MP, Valeyrie-Allanore L, Lesprit P *et al.* Infective endocarditis in a dermatology unit. *Ann Dermatol Venereol* 2009; **136**: 869–75.
- 6 Patel D, Jahnke MN. Serious complications from *Staphylococcal aureus* in atopic dermatitis. *Pediatr Dermatol* 2015; **32**: 792–6.

CPD questions

Learning objective

To raise awareness of the relationship between infective endocarditis and atopic dermatitis.

Question 1

Which of the following patients should possibly be referred to a cardiologist for further evaluation?

- a) Only those patients with uncontrolled atopic dermatitis.
- b) Every patient with atopic dermatitis.
- c) Patients with atopic dermatitis with a cardiac murmur.
- d) Patients with psoriasis.
- e) Patients with impetigo.

Question 2

How should patients with atopic dermatitis (AD) and defective heart valves be managed?

- a) As for other patients with AD.
- b) Itch should be treated promptly.
- c) Impetiginizatin should be always managed aggressively.
- d) Topical immunomodulators should not be routinely used.
- e) Systemic corticosteroids should not be routinely used.

Instructions for answering questions

This learning activity is freely available online at <http://www.wileyhealthlearning.com/ced>

Users are encouraged to

- Read the article in print or online, paying particular attention to the learning points and any author conflict of interest disclosures
- Reflect on the article
- Register or login online at <http://www.wileyhealthlearning.com/ced> and answer the CPD questions
- Complete the required evaluation component of the activity

Once the test is passed, you will receive a certificate and the learning activity can be added to your RCP CPD diary as a self-certified entry.

This activity will be available for CPD credit for 2 years following its publication date. At that time, it will be reviewed and potentially updated and extended for an additional period.