Systemic Contact Dermatitis from Ethylenediamine in an Aminophylline Preparation Presenting as the Baboon Syndrome

Marléne Isaksson[1] and Bo Ljunggren[2]
Departments of [1]Occupational and Environmental Dermatology and [2]Dermatology, Malmö University Hospital, SE-205 02 Malmö, Sweden.E-mail: marlene.isaksson@skane.se
Accepted September 2, 2002.

Sir,
Systemic contact dermatitis is a delayed hypersensitivity reaction in the skin after systemic exposure to a substance to which the person has a contact allergy. The baboon syndrome is a specific, clinical presentation of systemic contact dermatitis involving the buttocks and surrounding skin (1). Systemic contact dermatitis from ethylenediamine (EDA) in aminophylline given i.v. presenting as the baboon syndrome has been reported once (2). We present a second case.

CASE REPORT

A 66-year-old woman with chronic obstructive lung disease was admitted to our hospital in December 2001 because of a severe exacerbation of her lung disease. She was given 10 ml aminophylline (Teofyllamin®, Ipex, Sundbyberg, Sweden) i.v. followed by a continuous infusion of 20 ml aminophylline (Teofyllamin®) in NaCl 0.9% for 12 h in addition to 12 mg betamethasone (Betapred®, Glaxo Wellcome) i.v. The following day an itching, erythematous eruption started on her neck and spread during the day to the buttocks and groins. The eruption was symmetric, intensely erythematous and affected the flanks stretching to the hips, groins, axillae and neck. A few isolated lesions were seen on the thighs. There were papules and papulopustules in the periphery of the lesions. Topical clobetasol dipropionate was prescribed, but the cause to the eruption was not evident. Over the ensuing days the skin lesions became less intense. Because of pruritus, hydroxyzine (Atarax®, UCB) 25 mg was given orally at bedtime for 7 days. The patient was seen by a dermatologist before discharge, i.e. a week after her first visit to the Department of Dermatology, and the lesions had almost disappeared. When questioned about her medication during hospitalization, she remembered the i.v. injections. The medical charts were procured and revealed that aminophylline (Teofyllamin®) had been given. She was then referred for patch testing with our standard and corticosteroid series. She reacted with a bullous reaction (+++) to EDA on day 3.

DISCUSSION

Aminophylline is a combination of theophylline and EDA (mixture 2:1), where EDA is added to increase the solubility of theophylline. Systemic contact dermatitis from EDA in aminophylline has been reported (3, 4), including the baboon syndrome (2). In this syndrome, the buttocks and adjacent skin are involved, but the inner thighs and axillae may also be affected (1), as was seen in our patient. The EDA dose given during 24 h was 165 mg, which is a normal dose in emergency situations of chronic lung disease, but a high dose compared to the 1.25 mg nickel given in the first report of the baboon syndrome (1). In other reports of this syndrome, mercury, ampicillin, amoxycillin, erythromycin and 5-aminosalicylic acid have been implicated, but exact doses are not always presented. Type of medicament and the dosage for eliciting this special clinical presentation of systemic contact dermatitis are unknown (5–9).

Two years prior to this occasion our patient had received i.v. treatment for her lung disease without skin sequelae. On checking her charts from 1999 she had been given theophylline (Theofyllin®, Draco, Lund, Sweden), which does not contain EDA. It was the first time she had an i.v. dosage of theophylline. Following the patch test results the patient remembered she had been patch tested 20 years previously. She used a corticosteroid cream for perianal eczema and was patch-tested because at the time she developed a pruritic, papular, perianal rash from its use. Her chart confirmed that a positive (++) EDA patch test was found.

Guin et al. (2) postulated that the localization of their patient's eruption may have been because he had previously applied a topical medicament probably containing EDA. Whether this is relevant for our patient is not known.

According to some authors, EDA shows cross-reactions with hydroxyzine (4, 10, 11). However, this patient tolerated hydroxyzine (Atarax®) 25 mg at bedtime given for 1 week during hospitalization without any deterioration in her condition.

REFERENCES

1. Andersen KE, Hjorth N, Menné T. The baboon syndrome: systemically-induced allergic contact dermatitis. Contact Dermatitis 1984; 10: 97–100.
2. Guin JD, Fields P, Thomas KL. Baboon syndrome from i.v. aminophylline in a patient allergic to ethylenediamine. Contact Dermatitis 1999; 40: 170–171.
3. Terzian CG, Simon PA. Aminophylline hypersensitivity apparently due to ethylenediamine. Ann Emerg Med 1992; 21: 312–314.
4. Rietschel RL, Fowler JF Jr. Fisher's contact dermatitis, 4th ed. Baltimore: Williams & Wilkins, 1995: 227–229.
5. Le Coz CJ, Boos V, Cribier BJ, Grosshans EM, Heid E. An unusual case of mercurial baboon syndrome. Contact Dermatitis 1996; 35: 112.

 ISSN 0001-5555

6. Rasmussen LP, Menné T. Systemic contact eczema — the baboon syndrome — in ampicillin allergy. (Systemisk kontakteksem — ''baviansyndromet'' — ved ampicillinallergi).Ugeskr Laeger 1985; 147: 1341 – 1342. (In Danish).
7. Duve S, Worret W, Hofmann H. The baboon syndrome: a manifestation of haematogenous contact-type dermati-
8. Goossens C, Sass U, Song M. Baboon syndrome. Dermatology 1997; 194: 421 – 422.
9. Gallo R, Parodi A. Baboon syndrome from 5-aminosalicylic acid. Contact Dermatitis 2002; 46: 110.
10. Zuidema J. Ethylenediamine, profile of a sensitizing excipient. Pharm Weekbl Sci 1985; 7: 134 – 140.
11. Ash S, Scheman AJ. Systemic contact dermatitis to