

presented with itching papules and vesicles in the right axilla, which extended to the left axilla, arms, fossa poplitea, buttocks, and groin. A mercury thermometer was broken 2 days before exanthema. Patch testing to ammoniated mercury, mercury, mercuric chloride, and mercurochrome were positive. Blood and urine mercury level was marginally normal, yet showed a descending trend over time.

Key words: allergy; baboon syndrome; mercury; systemic contact dermatitis.

Case Report

A 31-year-old woman presented with a 3-day history of itching, papules, and vesicles in the right axilla, which extended to the left axilla, arms, buttocks, groin, and fossa poplitea over the next day (Fig. 1). Upon questioning, the patient disclosed that she had broken a mercury thermometer with mercury spillage under the right axilla and on the floor 2 days before the exanthema began. She had a past history of sensitization to mercurochrome.

CBC (Complete Blood Count), urine routine, complement level (C3,

C4, CH50), ANA (Antinuclear Antibody), double-stranded DNA, and ENA (Extractive Nuclear Antigen) were analysed and showed normal results. Patch tests were performed and results were read in accordance to the International Contact Dermatitis Research Group guidelines (1) (Fig. 2). In addition, serum, whole blood, and urine mercury were analysed using atomic fluorescence spectrometry. Serum mercury tested on D5 and D8 was 0.009 and 0.004 mg/l, respectively. On D8 and D30, whole blood mercury level was 0.007 and 0.002 mg/l, respectively. On D14, urine mercury was 0.005 mg/l. All the mercury levels were within normal and yet had a descending trend. The rashes disappeared after 10 days of treatment with prednisone 20 mg/day and cetirizine hydrochloride 10 mg/day.

Discussion

The baboon syndrome is a dramatic form of systemic contact dermatitis, occurring after ingestion or systemic absorption of a contact allergen in

Baboon syndrome induced by mercury – first case report in China

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Fig. 1. Rashes of systemic contact dermatitis induced by mercury. **a** right axilla, **b** erythema papules with oedema in the arms, **c** fossa poplitea, and **d** groin.

A case of mercury-induced baboon syndrome was reported. A 31-year-old woman



Fig. 2. Patch test with inorganic/organic mercury and nickel sulfate. **a** Mercuric sulfide, **b** ammoniated mercury, **c** metallic mercury, **d** amalgam discs, **e** mercuric chloride, **f** mercurochrome, **g** nickel sulfate, and **h** thimerosal.

individuals previously sensitized by topical exposure to the same allergen. The mercury in thermometers and fluorescent light bulbs, as well as beta lactam antibiotic drugs has been previously implicated (1–3). The symmetrical inflamed presentation, originally described over the gluteal region from rectal thermometer exposure, resembles the red gluteal area of baboons leaving this syndrome with an unforgettable but conceivably limited name and description. The most important contact allergens known to elicit systemically induced contact eczema are metal salts and drugs (2). We report the first Chinese mercury-induced baboon syndrome case.

Mercury is the only metal, which is liquid in ambient temperature and may become vaporized directly even at 0° celsius and may be inhaled. As in this case, the rashes appeared in areas of groin, axilla, elbow, and fossa poplitea where there are abundant sweat

glands, we suggest that mercury enters systemic circulation through the inhaling of mercury vapour and is discharged through the sweat glands producing topical inflammation. A study of the histological analysis, which showed mercuric sulfides/selenides may concentrate within and around the sweat gland epithelium as well as in dendritic cells, confirmed our assumption (4). We confirmed the specific sensitization by patch test in this patient, which showed positive reactions to ammoniated mercury, metallic mercury, mercuric chloride, and mercurochrome. The nickel patch test was negative.

The concentration of mercury in the body fluid descended with time, reflecting the absorption and expulsion of mercury. On D5, serum mercury of 0.009 mg/l was lower than the whole blood mercury normal value (0.01 mg/l). On D8, both serum and whole blood levels were lower than on D5, but whole blood mercury was

higher than serum blood mercury, which may be explained by the capability of combining mercury of red blood cells.

The patient had direct exposure to mercury in the right axilla, where the inflammation was most severe, a type IV allergy, as it occurred 2 days after exposure indicating not only systemic allergic dermatitis but also local inflammation caused by mercury allergy (1).

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