

likely to have occurred during the collection of used dye containers. He was restricted from contact with azo dyes at work. Follow up at 4 months showed resolution of his hand dermatitis.

Carbonless copy paper manufacturing is a complicated process which requires the addition of many chemicals to paper pulp (1, 2). These chemicals can broadly be divided into preservatives, sizing agents and dyes. Allergic contact dermatitis has been described during paper production from chromate (3, 4), cobalt (3), and 1,2-benzisothiazolinone (5). Azo dyes have not previously been previously reported as allergens in the production of paper.

Anaphylactic shock after application of chlorhexidine to unbroken skin

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Case Report

A 33-year-old man, with no previous history of allergy, presented in anaphylactic shock from 0.6% chlorhexidine. After a riding lesson, which had caused a rash on his buttocks but no wound, he had applied the antiseptic. Within a few minutes, he had developed generalized urticaria, dyspnea and loss of consciousness. Treatment with s.c. adrenaline and i.v. corticosteroid was rapidly effective.

2 months later, prick tests were performed with a positive control (codeine phosphate 9% in saline), negative control (physiological saline), the antiseptic solution (1/100 in physiological saline) and an aqueous solution of chlorhexidine (0.2%) (1/100 in physiological saline). The tests were positive at 20 min to the antiseptic solution (7–25 mm) and chlorhexidine (17–28 mm) in the patient, but negative in 3 control patients.

Discussion

Chlorhexidine, a cationic bis-biguanide antiseptic, active on numerous bacteria and a few viruses and fungi, is increasingly frequently implicated in contact dermatitis and anaphylactic reactions: as a topical antiseptic for a drain insertion site (2), before inserting coils (3), as a lubricant on urinary catheters (4), before performing cystoscopy (5), before surgery (1, 2, 6, 7), or on wounds (8). To our knowledge, this is the 1st report of anaphyl-

axis after application of chlorhexidine to unbroken skin. In previously reported cases, chlorhexidine was either in contact with the mucosa, or on a wound (catheter, surgical incision). There should be wider awareness of these rare but severe reactions.

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