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Allergic reaction to a red plastic allergy alert patient identification bracelet:

implications for surgical patient safety

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We present a case of allergy to a hospital thermally-printed red plastic allergy alert bracelet in a 48 year old lady admitted to the day surgery unit. Two hours postoperatively, an intensely itchy area of erythema and oedema was seen extending from her left wrist distally to the fingers. The bracelet was removed and the rash resolved overnight without further complication. A diagnosis of contact dermatitis was made, secondary to exposure to an agent within the bracelet. We discuss the safety implications for surgical patients unable to wear an identification bracelet and the steps that may be taken to minimise the risk of harm from misidentification. We believe this to be the first documented case of an allergy to a patient identification bracelet in the medical literature.

Introduction

Healthcare staff should be vigilant for signs of iatrogenic allergic and adverse reactions in their patients. Contact dermatitis, a type IV or delayed hypersensitivity reaction, presents with a rash local to the exogenous agent. The agent may be an irritant or an allergen, the former causing more cases of contact dermatitis than the latter (Gawkrodger 2008). Irritants include frictional irritancy, acids, alkalis, solvents, soaps and detergents. Common environmental allergens include cobalt, colophonium and epoxy resins and all three of these may be found in inks, paints and plastics, and as such could be present in the patient allergy band.

There is often an inherited susceptibility to react to irritants, a history of 'sensitive skin' or atopy. The hands and face are common sites for contact dermatitis and nickel sensitivity is the commonest contact

allergy, affecting 10% of women and 1% of men (Gawkrodger 2008). The main feature of allergic contact dermatitis is that identification and removal of the suspected agent leads to resolution of the rash. Patch testing may positively identify the causative allergen, as demonstrated in a large series of patients from Turkey who, when patch tested, delineated the exact outline of contact dermatitis.

Case report

A 48 year old lady was admitted to the day surgery unit for the elective extraction of multiple carious teeth under general anaesthesia. She had a positive history of allergy to penicillin and non-steroidal anti-inflammatory drugs, and a red plastic patient identification bracelet (Figure 1) was placed on her left wrist on admission, to alert the healthcare team. This was in keeping with the trust's patient

identification policy and established National Patient Safety Agency guidance and standards (Akasya-Hillenbrand & Ozkaya-Bayazit 2002). The right hand was cannulated for intravenous access and she underwent the surgical procedure uneventfully.

Two hours postoperatively, an intensely itchy area of erythema and oedema was seen extending from her left wrist distally to her fingers (Figure 2). The bracelet was removed and the extent of the rash marked with a pen. She was given chlorphenamine 4mg orally and admitted for overnight observation. The rash resolved overnight without further treatment or complication and the patient was discharged the following day. A diagnosis of contact dermatitis was made, ironically due to exposure to an agent within the red plastic bracelet. ➔

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Continued



Figure 1 Red patient identification wrist band



Figure 2 Erythema and oedema extending from the left wrist to the fingers

Differential diagnosis

Contact dermatitis needs to be differentiated from latex contact urticaria and the endogenous eczemas (Gawkrodger 2008). However, our trust uses latex-free nitrile gloves and the patient did not have a history of endogenous eczema.

Management

The ideal management of allergic contact dermatitis is prevention by avoiding the known agent, although identification of the specific agent may be difficult (Gawkrodger 2008). However, once a reaction has occurred, it is important to remove the cause as this leads to rapid resolution of the rash. If the agent has been in contact with the skin for a while, the rash may take up to two weeks to resolve.

Barrier creams are not proven to be of benefit (Gawkrodger 2008). A medium to high potency topically applied corticosteroid is usually sufficient if the affected area is localised, and this may be applied daily for a maximum of two weeks to avoid corticosteroid-induced side effects such as dermal atrophy. In areas where the skin is thin, such as the face and in skin folds, topical calcineurin inhibitors, such as pimecrolimus and tacrolimus may be used to avoid the corticosteroid-induced side effects.

Patient identification bracelets

The National Patient Safety Agency recognises that failure to identify patients correctly poses a serious risk to patients. Between November 2003 and July 2005, the National Reporting and Learning Service (NRLS) received 236 reports of patient safety incidents and near misses relating to missing bracelets or bracelets with incorrect information (NPSA 2005). The correct identification of patients should eliminate this risk and improve patient safety. Patient misidentification may lead to serious or fatal outcomes (Akasya-Hillenbrand & Ozkaya-Bayazit 2002). For example, patients may be:

- given the wrong drug
- given the wrong procedure or operation

- given unnecessary radiation if sent for an X-ray or CT scan
- given the wrong diagnosis as described in the 'never events' list 2012/13, which was prepared by the Patient Safety Policy Team (DH 2011).

If the wrong patient is brought to theatre, there will be a delay in operating on the correct patient. In the case of an emergency list patient, this could seriously compromise their prognosis. On an elective list, the delay may lead to cancellation of the last patients on the list. This increases stress levels for patients and staff alike and leads to complaints and threats of litigation to the hospital from disgruntled patients.

Identification bracelets should be placed by staff immediately on admission or attendance. At our trust, the policy is that the bracelets should contain four patient identity markers: the last name, first name, date of birth and NHS number (Portsmouth Hospitals NHS Trust 2011). The never-events list published by the Department of Health clearly describes how inpatient misidentification due to failure to use standard wristbands can lead to death or severe harm. A red bracelet is used in place of a white one if the patient has a known medical allergy or another medically relevant alert. Both white and red bracelets have black writing on a white background, printed via a thermal printer.

In patients who are unable or unwilling to wear a bracelet, such as in severe burns cases, multiple major trauma or allergy to the wrist band itself, steps must be taken to

reduce the risk of patient misidentification. Such measures may include:

- Temporarily placing a band or other identifier on their forehead whilst in theatres
- Verifying their identity through open and not closed questioning
- Labeling their bed
- Labeling their vital signs monitor
- Re-confirming their identity at the staff change of shift and hand-over
- Cross-referencing all identifying information and documentation.

Patients who refuse to wear an identification bracelet should not receive any prescribed treatment.

Conclusion

This is the first known documented case of an adverse reaction to a red plastic patient identification bracelet. It is important that for patients unable to wear these bracelets, other methods are used to identify them correctly to avoid the risk of harm from misidentification.

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