



Case report

ALLERGIC CONTACT DERMATITIS WITH AN UNUSUAL CONFIGURATION AFTER PRE-OPERATIVE POVIDONE-IODINE DISINFECTION. A CLINICAL CASE

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ABSTRACT

Contact dermatitis is an inflammatory skin reaction resulting from skin contact with exogenous substances that act as allergens and/or irritants. Epicutaneous testing is the gold standard for diagnosing allergic contact dermatitis and differentiating it from irritant contact dermatitis. We present a clinical case of allergic contact dermatitis after preoperative povidone-iodine disinfection.

Keywords: allergic contact dermatitis, povidone-iodine, preoperative disinfection,

INTRODUCTION

Contact dermatitis (CD) is an inflammatory reaction of the skin surface after contact with exogenous substances. It is allergic and irritating, and when sunlights are also involved in etiopathogenesis, we speak of photodermatitis [1]. Irritant CD (ICD) is the most common form of contact dermatitis. In this form, there is no prior sensitization of the body, therefore, it manifests itself clinically in the first few hours after contact due to direct damage to the epidermis from irritating substances. By its nature, it can be an acute or chronic inflammatory reaction [2, 3]. Allergic contact dermatitis (ACD) is the second most common contact dermatitis. It occurs after repeated contact of an allergen with the skin, which is above the individual threshold of sensitivity and in a previously sensitized individual. It represents an immunologically mediated reaction of delayed (IV) type [4]. ACD clinically manifests itself acutely with erythematous, indurated papules and plaques, edema, vesicles, and in more severe cases, with the formation of bullae. Chronic ACD manifests with lichenification, hyperkeratosis and rhagades [5]. The gold standard in the diagnosis of ACD and its differentiation from ICD is epicutaneous testing [6].

CLINICAL CASE

We present a clinical case of a 67-year-old male patient referred to the Department of Skin and Venereal Diseases due to the appearance of erythema-macular lesions with a geometric shape, symmetrically located on the lateral parts of the trunk and gluteal region (fig. 1). The patient reported that the rash developed 18 hours after radical robot-assisted prostatectomy for prostatic adenocarcinoma, histologically proven by incisional biopsy. Povidone-iodine was used for the preoperative disinfection of the operative field, and the operative field was dried and wiped before the intervention. The patient's position during surgery was extreme Trendelenburg (fig. 2). The patient has no history of an allergic reaction to povidone-iodine in the past.

Epicutaneous testing was performed with European Standard Series S-1000 (Chemotechnique Diagnostics) and povidone-iodine placed on filter paper in one of the chambers. At 48 and 72 hours, we found a positive reaction to povidone-iodine (+++) (fig. 2). We also reported a positive reaction to the allergens - Potassium bichromate (+), Cobaltum chloridum (+), Kathon (+), Methyl-dibromoglutaro-nitrium (+), Methylisothiazolinone (+) (fig. 3).

The history of the disease, the type of lesions - a symmetrical rash on the most weight-bearing parts of the body, predisposing to the retention of the causative agent in the same areas and the results obtained from the performed epicutaneous testing are grounds for making a diagnosis of contact dermatitis due to povidone iodine in the areas with more prolonged time contact and greater concentration of the suspected substances.

On admission, the patient was no longer in contact with the sensitizing medication and quickly responded to Methylprednisolone 40 mg i.v, Allergozan - 2 x 1 i.m. and topical corticosteroid cream.

The patient signed an informed consent that a clinical case accompanied by photographic material would be published in a scientific journal.

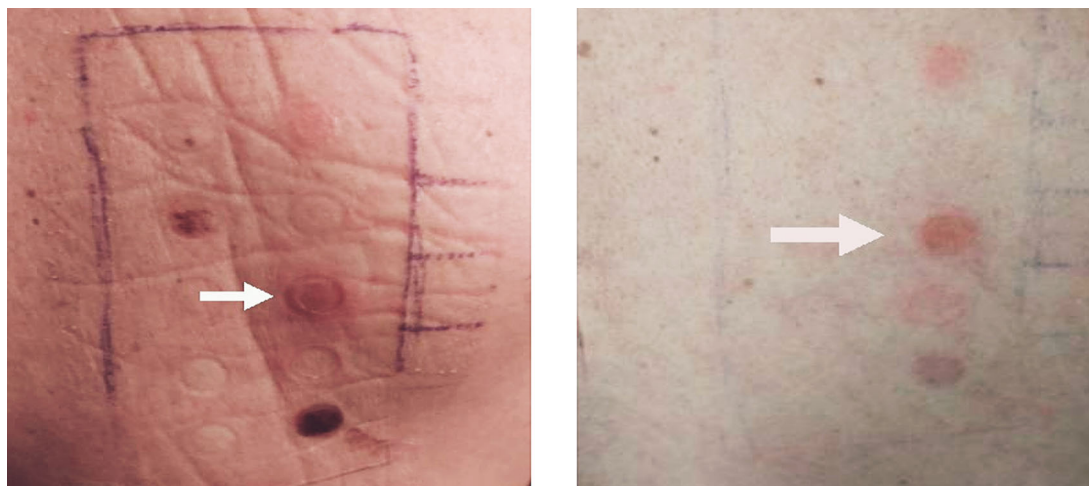
Fig. 1. Erythematous macular, symmetrical lesions on the trunk and gluteal region



Fig. 2. Preoperative disinfection with povidone-iodine and its retention in the areas of greatest pressure (lateral parts of the trunk and gluteal region) after its removal



Fig. 3. Positive reaction to povidone-iodine at 48 and 72 hours (pointed with arrow). From top to bottom and from left to right a positive reaction to the allergens - Potassium bichromate (+), Cobaltum chloridum (+), Kathon (+), Methyl-dibromo-glutaro-nitrilum (+), Methylisothiazolinone (+)



DISCUSSION

Povidone-iodine is one of the most commonly used antiseptics due to its broad spectrum of bactericidal properties. On the other hand it has also a good effect against viruses, fungi, spores and protozoa. This necessitates the use of this synthetic polymer as a suspending agent in a number of pharmaceutical products, including iodine. It is considered as a very rare sensitizer [7, 8], and there are just a few reports about its allergenic properties [9-12]. Systemic absorption of the preparation after topical application may induce immunoglobulin E (IgE)-mediated allergic reactions. Clinically, it presents with irritation and itching at the site of contact, which appear and pass almost immediately after the cessation of this contact [13]. More severe reactions to povidone-iodine leading to anaphylaxis have also been observed [14, 15]. Although rarer, cases of angioedema immediately after contact with povidone-iodine have been reported [16]. Most of these reactions occurred immediately after exposure to povidone-iodine, representing an early-phase IgE-mediated allergic reaction. Reports of late-phase IgE-mediated allergic reactions with symptoms occurring 6-8 hours after exposure are significantly less [13-15]. And even more rarely, angioedema with-

out accompanying anaphylaxis has been observed and reported [16].

In the presented clinical case, the rash developed 18 hours after contact with povidone-iodine. The irritation does not involve the entire skin surface that was in contact with the disinfectant, but only the areas where its concentration was significantly greater.

CONCLUSION

We presented a clinical case of ACD to povidone-iodine, 18 hours after its use for disinfection in a patient without evidence of previous contact allergy, just in the places of increased concentration of the sensitizer.

Povidone-iodine is the most commonly used antiseptic cleaning solution in surgical interventions, and yet, allergic contact dermatitis to it is not well reported and documented, which we believe means that it is underappreciated and underestimated compared to other common allergens. We believe that this clinical case raises an important question for reflection - is preoperative testing for povidone-iodine allergies required in patients undergoing prolonged skin contact with the medication?

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