

Postoperative purpuric contact dermatitis: Think about antiseptics

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We describe two cases of purpuric contact dermatitis occurring immediately after surgery.

CASE REPORTS

Case 1: A 28-year-old female patient underwent surgery for buttock synechiae as a result of previous surgery for pilonidal sinus. She was positioned prone during the reconstructive surgery. The next day, she presented with a purpuric eruption of the inguinal folds, the anterior part of the thighs, and the right flank, with itching and burning sensations. Lesions were symmetrical and sharply demarcated (Figure 1). The patient reported having a similar eruption a few years before, soon after an abdominoplasty. The lesions healed quickly after

application of a corticosteroid cream, leaving residual hyperpigmentation. We suspected the antiseptic solution, povidone-iodine (PV-I) 10% (Bétadine dermique, Mylan Medical, Paris), used during the current surgery as the possible cause of this eruption. Some time after the episode, the patient was patch tested with the European baseline series (Chemotechnique Diagnostics, Vellinge, Sweden), which gave negative results. Bétadine dermique tested “as is” led to purpuric reactions on day (D) 2 and D3 (+ Supporting Information Figure S1), whereas patch tests with an antiseptic/preservative series (Chemotechnique Diagnostics) gave negative results. On the basis of these results, irritant purpuric contact dermatitis caused by PV-I was diagnosed.

Case 2: A 34-year-old female patient underwent a surgical procedure for ovarian cancer in a supine position. The next day, she noted a painful and slightly itchy purpuric eruption localized on her buttocks and her back (Figure 2). This disappeared within a few days without treatment, leaving some residual pigmentation. Later, patch tests were carried out with the European baseline series (Chemotechnique Diagnostics), all of which gave negative results. Patch testing with Bétadine dermique “as is” gave positive reactions, with erythema and oedema on D2 (+), and with vesicles on D4 (++). Repeated open



FIGURE 1 Case no. 1: purpuric eruption



FIGURE 2 Case no. 2: purpuric eruption

application tests (ROATs) on the forearm with Bétadine dermique gave negative results until the D14 follow-up.

DISCUSSION

PV-I is a widely used antiseptic in medical care units, because of its broad antimicrobial spectrum of activity. PV-I has both irritant and allergenic properties, but is usually considered to be a rare sensitizer.¹⁻³ Furthermore, it can induce irritant and even caustic lesions, particularly after prolonged contact with the skin through PV-I-saturated dressings during surgical intervention. These skin lesions are commonly mistaken for electrical burns.¹

PV-I patch tests results need to be very carefully interpreted, because the presence of erythema, oedema and even vesicles can be misinterpreted as an allergic reaction, whereas it is actually an irritant reaction, as in case 2.¹ In addition, mixed irritant and allergic patch test and clinical reactions can coexist. In this context, a ROAT may be useful for differentiating allergic and irritant contact dermatitis.¹ Petechial irritant patch test reactions are frequent with some allergens, such as cobalt chloride.⁴ However, purpuric patch test reactions are also observed in allergic reactions, for example, to azo dyes.⁵

Surprisingly, in case 2, although the patch test reaction was not purpuric, but erythematous with induration and vesicles, the ROAT gave a negative result. Because of the particular aspect of the clinical lesions and the negative reaction in the ROAT, we concluded that the patients had suffered from irritant dermatitis rather than allergic contact dermatitis.

In conclusion, in the two reported cases, prolonged contact with PV-I had induced purpuric, well-delimited irritant contact dermatitis. Clinicians should be aware of this aspect occurring soon after surgery.

CONFLICTS OF INTEREST

The authors have no conflicts of interest to report.

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REFERENCES

1. Lachapelle JM. Allergic contact dermatitis from povidone-iodine: a re-evaluation study. *Contact Dermatitis*. 2005;52:9-10.
2. Tosti A, Vincenzi C, Bardazzi F, Mariani R. Allergic contact dermatitis due to povidone-iodine. *Contact Dermatitis*. 1990;23:197-198.
3. Reyazulla MA, Gopinath AL, Vaibhav N, Raut RP. An unusual complication of late onset allergic contact dermatitis to povidone iodine in oral and maxillofacial surgery—a report of 2 cases. *Eur Ann Allergy Clin Immunol*. 2014;46:157-159.
4. Schmidt H, Schulz Larsen F, Larsen PØ, Søgaard H. Petechial reaction following patch testing with cobalt. *Contact Dermatitis*. 1980;6:91-94.
5. Lazarov A, Cordoba M. The purpuric patch test in patients with allergic contact dermatitis from azo dyes. *Contact Dermatitis*. 2000;42:23-26.

SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of this article.

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We describe two cases of purpuric contact dermatitis immediately after surgery.

Case reports

Case 1: A 28-year-old female patient underwent surgery for buttock synechias as a result of previous surgery for pilonidal sinus. She was positioned prone during the reconstructive surgery. The next day, she presented with a purpuric eruption of the inguinal folds, the anterior part of the thighs and the right flank with itch and burning sensation. Lesions were symmetrical and sharply demarcated (Fig. 1). The patient reported a similar eruption a few years before soon after an abdominoplasty. The lesions healed quickly after applying a corticosteroid cream, leaving residual hyperpigmentation. We suspected the antiseptic solution, povidone-iodine 10% (PV-I; Bétadine dermique, Mylan Medical, Paris) used during the current surgery as possible cause of this eruption. Some time after the episode, the patient was patch tested with the European baseline series (Chemotechnique Diagnostics, Vellinge, Sweden) which was all negative. Bétadine dermique tested “as is” led to a purpuric reaction at day (D) 2 and D3 (+; Fig 2), while patch tests with an antiseptic/preservative series (Chemotechnique Diagnostics) were negative. Based

on these data, the diagnosis of irritant purpuric contact dermatitis due to PV-I was made.

Case 2: A 34-year-old female patient underwent a surgical procedure for ovarian cancer in a supine position. The next day, she noted a painful and slightly itchy purpuric eruption localized on her buttocks and her back (Fig. 3). This disappeared within a few days without treatment, leaving some residual pigmentation. Later, patch tests were carried out with the European baseline series (Chemotechnique Diagnostics) and were all negative. Patch testing with Bétadine dermique “as is” was positive with erythema and oedema at D2 (+) and with vesicles at D4 (++). Repeated open application tests (ROAT) on the forearm with Bétadine dermique were negative until D14 follow-up.

Discussion

PV-I is a widely used antiseptic in medical care units, related to its broad antimicrobial spectrum of activity. PV-I has both irritant and allergenic properties but is usually considered as a rare sensitizer (1-3). Furthermore it can induce irritant and even caustic lesions, particularly after prolonged contact with the skin through PV-I-saturated dressings during surgical intervention. These skin lesions are commonly mistaken for electrical burns (1).

Povidone-iodine patch tests results need to be very carefully interpreted because the presence of erythema, oedema and even vesicles can be misinterpreted as an allergic reaction, while it is actually an irritant reaction as in case 2 (1). In addition, mixed irritant and allergic patch tests and clinical reactions can co-exist. In this context, a ROAT may be useful to differentiate allergic and irritant contact dermatitis (1). Petechial irritant patch tests are frequent with some allergens such as chloride cobalt (4). However, purpuric patch test reactions are also observed in allergic reactions, for example to azo dyes (5).

Surprisingly, in case 2, although the patch test was not purpuric but erythematous with induration and vesicles, the ROAT was negative. Because of the particular aspect of the clinical lesions and the negative reaction in the ROAT, we concluded

that the patients had suffered from irritant dermatitis rather than allergic contact dermatitis.

In conclusion, in the two reported cases, a prolonged contact with povidone-iodine had induced purpuric, well-delimited irritant contact dermatitis. Clinicians should be aware of this aspect occurring soon after surgery.

References

1. Lachapelle JM. Allergic contact dermatitis from povidone-iodine: a re-evaluation study. Contact Dermatitis. 2005; 52 : 9-10.
2. Tosti A, Vincenzi C, Bardazzi F et al. Allergic contact dermatitis due to povidone-iodine. Contact Dermatitis 1990 ; 23: 197-198.
3. Reyazulla MA, Gopinath AL, Vaibhav N, Raut RP. An unusual complication of late onset allergic contact dermatitis to povidone iodine in oral and maxillofacial surgery - a report of 2 cases. Eur Ann Allergy Clin Immunol 2014; 46:157-159.
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5. Lazarov A, Cordoba M. The purpuric patch test in patients with allergic contact dermatitis from azo dyes. Contact Dermatitis 2000; 42:23-26.







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