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## CASE IMAGE

# Annular papulovesicular lesions with a purpuric center in a female inpatient

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## Key Clinical Message

Epidermal multinucleated keratinocytes, or epidermal grape cells, in the absence of any viral infection, are an important histological finding and a clue for the diagnosis of dermatoses induced by external irritation or aggression, dermatitis artefacta, and factitial dermatitis. Thermal damage such as cryogenic injury is part of the spectrum of causes to be evoked in case of their presence.

## KEYWORDS

cold-induced contact dermatitis, factitial dermatitis, irritant dermatitis, multinucleated keratinocytes

## 1 | CASE PRESENTATION

A 42-year-old woman was referred to our dermatology clinic for a burning sensation in the lumbar area. She was hospitalized in the neurology department for a weakness and numbness of the left part of the body. A lumbar puncture was performed using an aethylchlorid Sintetica® spray (chloroethanum 100%) for cryo-anesthesia, followed by a local anesthesia with Rapidocain® 0.1% and epinephrine. A few days later, we noted three annular lesions of different sizes with a purpuric center and an erythematous papulovesicular rim (Figure 1).

The clinical differential diagnoses included irritant or allergic contact dermatitis, auto-immune bullous disease, or an infectious disorder (*Herpes simplex virus* (HSV) or impetigo).

Gram staining examination of the vesicle fluid revealed very few neutrophils with no bacteria. Polymerase chain reaction for HSV, and bacterial culture and mycological culture were negative. A skin biopsy was performed at the periphery of a vesicle and histological examination revealed multiple epidermal multinucleated keratinocytes,

associated with few keratinocytes necroses (Figure 2). Direct and indirect immunofluorescence were negative.

Treatment with topical corticoid for 5 days resulted in the resolution of cutaneous lesions.

## 2 | WHAT IS THE MOST LIKELY DIAGNOSIS?

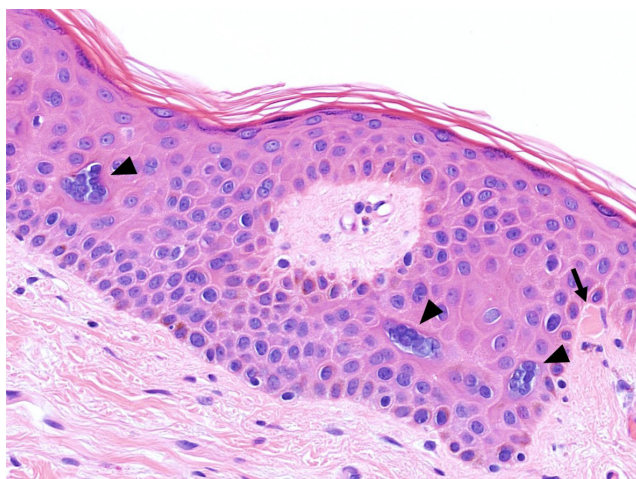
The diagnosis was therefore an irritant and cold-induced contact dermatitis.

## 3 | DISCUSSION

Contact dermatitis is a local inflammation of the skin caused by chemical or physical agents. Dermatitis artefacta (DA) consists of self-induced mechanical, thermal or chemical skin lesions that is usually observed in a psychiatric context. It is a diagnosis of exclusion based on the absence of evidence for a specific dermatosis. The spectrum of its expression is wide, but there are some dermatological



**FIGURE 1** Annular lesions with a purplish center and an erythematous papulovesicular rim.



**FIGURE 2** Hematoxylin-eosin, original magnification ×40: Multiple epidermal multinucleated keratinocytes and a basal necrotic keratinocyte (arrow).

signs that suggest this condition: geometric contours, unusual arrangement, and distribution. The lesions are located in sites accessible to the patient and usually present in variable stages of evolution at any specific time. When DA is suspected, skin biopsy is usually performed to rule out the differential diagnoses. The identification of some histological clues is helpful in confirming the diagnosis.<sup>1</sup>

Epidermal multinucleated keratinocytes (multinucleated epidermal giant cells or grape cells) are a characteristic pathologic finding and can be a sign of a cytopathogenic

effect in the context of some cutaneous viral infections, such as HSV, varicella zoster, or measles. This finding, in the absence of any viral infection, is known to be indicative of DA and dermatoses induced by irritation or chronic aggression. Indeed, this finding in association with superficial keratinocytes necroses suggests a factitial dermatitis or an external dermatosis such as thermal, chemical, or mechanical ones.<sup>2,3</sup> In our case, the cooling anesthetic spray was used several times during the procedure and was therefore the cause. We could make a connection with the factitial dermatitis induced by a cryo-damage by abuse of common deodorant sprays that is commonly called the “deodorant challenge.”

In conclusion, we present a case of irritant and cold-induced contact dermatitis, mimicking a bullous dermatosis, and displaying multinucleated keratinocytes. As there are many reports of their presence in dermatitis artefacta, we think that dermatologists and dermatopathologists must be aware of a broader spectrum of diagnoses to be evoked in case of their presence.

#### AUTHOR CONTRIBUTIONS

**David Alvarez Martinez:** Conceptualization; writing – original draft. **Gürkan Kaya:** Writing – review and editing. **Sébastien Menzinger:** Conceptualization; supervision; writing – review and editing.

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#### CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

#### DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

#### CONSENT

Written informed consent was obtained from the patient to publish this report in accordance with the journal's patient consent policy.

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