

SHORT COMMUNICATION

Cryotherapy Caused Widespread Subcutaneous Emphysema Mimicking Angioedema

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Subcutaneous emphysema (SE), defined by the presence of gas within the subcutaneous tissue compartment, is typically observed in patients who have severe soft-tissue infections with certain gas-producing bacteria, or following rupture of a visceral organ, e.g. the lungs or intestines. SE can usually be diagnosed clinically by palpation of subcutaneous air bubbles and, in doubtful cases, X-ray or computed tomography (CT) may be used to confirm the diagnosis. SE has been infrequently reported in patients with skin disorders after treatment with liquid nitrogen therapy (1, 2).

We report here a case of widespread SE in a patient who was treated with liquid nitrogen spray for a basal cell carcinoma on the cranial vertex. The reaction was initially diagnosed as facial angioedema due to cold exposure, but upon follow-up the correct diagnosis of SE was made.

CASE REPORT

A 69-year-old healthy woman with no known allergies or previous reactions to cold was seen in private

practice. She did not use any medication. For the treatment of a 0.5×0.5 cm basocellular carcinoma on the cranial vertex, local anaesthesia and deep curettage, followed by cryotherapy with liquid nitrogen spray, was chosen. The nozzle aperture was placed almost in direct contact with the bottom surface of the cutaneous defect following removal. Rapidly after cryotherapy, the patient complained of a sensation of “curtains that were lowered down her face”. The duration of cryotherapy was 10–15 s. A local reaction with severe facial swelling mimicking angioedema was observed. The patient was unable to open her eyes due to swollen eyelids. She was given antihistamines and was observed for a few hours. When stable she went home and returned for follow-up 48 h later. Here, SE could be palpated diffusely on the scalp, face, neck and upper thorax. The facial swelling had regressed substantially, but was still evident (Fig. 1). She complained of itchy skin and fever reaching 38.5°C, which resolved within 24 h after cryotherapy. In addition, she had felt some constriction of the airways and a raspy voice. There were no signs of other diseases, and the patient recovered completely.



Fig. 1. Subcutaneous emphysema and residual facial swelling 48 h after cryotherapy of a basocellular carcinoma on the cranial vertex. The erythematous area on the lateral aspect of the right eyebrow was caused by cryotherapy of an actinic keratosis.

DISCUSSION

SE is a rare complication following cryotherapy. Curettage leaves a defect in the skin and the borders may swell following cryotherapy, thus creating a one-way valve through which compressed gas may enter due to the positive pressure. The condition is self-limiting and benign, although it may cause concern to the patient and the physician. Cryotherapy should be administered cautiously, and the use of a cotton-tipped applicator may be more suitable in cases where prolonged freezing is necessary, especially on the face and scalp.

The authors declare no conflicts of interest.

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