

Dry ice-induced frostbite injury

FIG 1a, 1b. Dorsal and ventral aspect of involved hands with tense blisters and erythematous base



FIG 2a, 2b, 2c. Darkening of the well-defined erythema with flaccid blisters after aspiration on the dorsum and ventral aspect of hands, 1 week after initiation of treatment

Frostbite is a cold thermal injury that occurs when tissues are exposed to temperatures below their freezing point for a sustained period of time. Dry ice or solid carbon dioxide is used as a refrigerant, widely used to transport frozen items. It causes frostbite-like injury, which is managed in the same way as other frostbite injuries. A 24-year-old man presented to us one week after contact with dry ice (Figs 1a, 1b). He had solid carbon dioxide-induced frostbite. Sterile puncturing of the tense blisters, limb elevation and topical steroids with emollients, NSAIDs (non-steroidal anti-inflammatory agents) and oral prednisolone were the treatments advised (Figs 2a–c).

Frostbite causes increased tissue release of arachidonic acid metabolites such as PGE₂, PGF_{2a} and thromboxane B₂. Hence, NSAIDs have been shown to decrease hospitalization time of patients with frostbite.¹

Local re-warming should begin only if the risk of refreezing has been eliminated. Thawing then refreezing results in more extensive injury.² Hypothermia should be corrected and tetanus prophylaxis is indicated.³ Clear blisters represent superficial injury and require debriding to prevent further contact with mediators in the exudate. Haemorrhagic blisters represent structural damage to the superficial dermal plexus and debridement increases risk of further injury due to desiccation of deeper dermal layers.

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[To cite: George NM, Varghese AE. Dry ice-induced frostbite injury. *Natl Med J India* 2022;**35**:374–5.]

Obituaries

Many doctors in India practise medicine in difficult areas under trying circumstances and resist the attraction of better prospects in western countries and in the Middle East. They die without their contributions to our country being acknowledged.

The National Medical Journal of India wishes to recognize the efforts of these doctors. We invite short accounts of the life and work of a recently deceased colleague by a friend, student or relative. The account in about 500 to 1000 words should describe his or her education and training and highlight the achievements as well as disappointments. A photograph should accompany the obituary.

—Editor