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Dermatitis, Contact, Allergic & Irritant

Irritant contact dermatitis from “miracle mineral solution”

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Introduction: Miracle [mineral solution](#), also known as MMS, is supposed to contain a 28% solution of [sodium chlorite](#). Its distributors instruct its clients to mix it with an acid, such as [lemon juice](#). The reaction of both components forms [chlorine dioxide](#), a potent [bleach](#) otherwise used for stripping textiles and industrial water treatment. Outside of its commercial uses, MMS has been claimed to be a cure for multiple unrelated diseases, including malaria, AIDS, [acne](#), or cancer. However, we were unable to locate any evidence published in any peer-reviewed journal to support the claims. Moreover, several government agencies such as the FDA, Health Canada and The Spanish Agency of Medicines and Medical Devices, have warned about its [health risks](#).

Case report: A 42-year-old man came to the emergency room presenting with lesions on his trunk developing after spraying the area with a mixture of MMS and [citric acid](#) in [distilled water](#), in an attempt to treat what the patient described as a previous cutaneous [fungal infection](#). On [physical examination](#), diffuse [erythema](#) with dusky areas involving large areas of the lateral sides of his trunk could be observed. Histopathologic examination disclosed [epidermal hyperplasia](#) with [hyperkeratosis](#), apoptotic [keratinocytes](#) and [fibrosis](#) of [papillary dermis](#). Both clinical and histopathologic features were consistent with toxic [irritant dermatitis](#). Standard and cosmetic patch test series gave negative results. The pH of the mixture provided by the patient was estimated to be between 2.5 and 3. The patient was diagnosed with irritant contact dermatitis likely from MMS. [Corticosteroids](#) were prescribed for one week. Additionally, the patient was advised to discontinue the use of the product. These measures led to a clearance of the lesions.

Discussion: The first case of [irritant contact dermatitis](#) from topically applied MMS is reported. A case of Kikuchi-Fujimoto disease presenting after consumption of MMS involving a 41-year-old woman was reported in 2014. There are four reported cases of poisoning after ingestion or inhalation of sodium chlorite. According to these reports, it can lead to methemoglobinemia, oxidative hemolysis and acute kidney injury. The management of these cases might require the early administration of methylene blue, renal replacement therapy and transfusion of red blood cells. It is important for dermatologists to keep in mind that MMS exists as it may cause skin lesions as in our case.

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