

Skin Rash Related to the Use of Wood Ash in Wound Healing, about A Case

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Abstract

The ash of wood plants is part of the ancestral remedies because of its physical and chemical properties. It has detergent, fertilizing, and antiseptic properties, which justifies its many uses. We report the case of a woman aged 50 years who presented with a generalized rash all over the body with painful macules a burning sensation and a fever. Symptoms appeared after taking wood ash from plants, for three days. The reason for use was the healing of Zona's wound that she contracted and treated before admission. The patient's general condition was preserved, and the drug treatment allowed a quick healing. Wood ash from plants with a high potassium hydroxyl content may be an irritant and partly explain the reaction observed. Traditional treatments should be used with great care to avoid adverse effects.

Keywords: Fever, skin rash, traditional medicine, wood ash

Introduction

Wood ash from plants has been used for centuries and has numerous applications. Ancestors used it for making soaps and toothpaste, to prevent gingivitis and aphthous ulcers (1). Due to the presence of sodium and potassium with an alkaline character, it was indicated for treating superficial wounds (2). It was also used by pre-Islamic Arab medicine as hemostatic (3). They also enabled local populations in Africa to make alkaline potash (in the form of crystals) and make preparations for healing (4). It was also noted that ash is added to sauces and cooking preparations to enhance the flavor of certain foods or reduce their acidity (4).

In daily practice, many adverse effects are reported following the use of medicinal plants or their derivatives. We describe a generalized rash with burning and fever following administration and local application of wood ash from plants.

Case Report

The case is a 50-year-old woman who weighs 53kg and measures 157 cm, and lives in a rural area and was admitted

to the internal medicine department following the onset of a toxidermia and fever. She is immunocompromised who has been suffering from polymyositis for 4 years and contracted Zona before admission. The patient reported this adverse effect from oral (1 teaspoon in a glass of water) and local (powder applied) wood ash use, for 4 days. She stated that she had not been taking any treatment associated with traditional preparation for 20 days. The reason for the use was the healing of a zonal wound; she claims that her wound healed, but at the end of the third day, there was an appearance of fever with pimples all over the body. The brief physical examination of admission to the internal medicine ward showed that the pulmonary, cardiovascular and neurological apparatus did not detect any abnormalities. Lymph node examination showed right and left axillary lymphadenopathy. The dermatological examination revealed a diffuse maculopapular rash, hot to palpation, with no edema and oral, nasal or ocular involvement. However, the purpuric erythema reached the blow and the extremities of the lower and upper limbs (Figure-1). Biological examination was correct except for three parameters which were high: C-reactive protein (CRP) which was 40.72g/L, white blood cells (GB): 28300/mm³ and sedimentation rate

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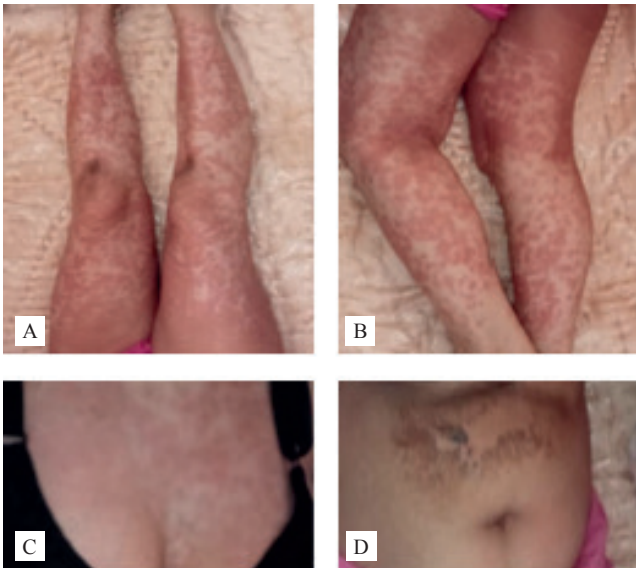


Figure 1. Appearance of the rash and macules on the lower limbs and bust.

A, lower limbs (face view), B, lower limbs (profile view), C, bust, D, Zona wound healing

(VS): 65nm (the first hour) and 130nm (the second hour). After drug management (corticosteroids and fusidic acid), his condition was improved without sequelae. Because of the lack of a direct cause and logical explanation for the occurrence of the rash in the patient, the adverse event was reported to the phyto vigilance unit. Oral and local use of ashes were heavily incriminated.

Discussion

Ash is the mineral residue obtained after the combustion of organic matter, most often a plant. They are complex in composition, varying according to the nature of the plant incinerated, the part (leaves, trunk, and branches), the season, and the soil or plant growth (5). Generally, ash contains calcium, silica, potassium, magnesium, and heavy metals. Their pH is alkaline (5).

Ash composition from the reported case could not be determined. Several elements can be incriminated; the wood of some plants may contain allergens and essences; it has been noted that benzo, naphto, and furano quinones are responsible for dermatitis (6) (7). A 20-year study at St John's Hospital for Skin Diseases, London, reported 83 cases of dermatitis caused by wood or wood derivatives (8). 300 botanical species and 28 toxic woods were identified (8). Irritant chemicals are often found in sap or latex and are characteristic of certain families such as Moraceae, Urticaceae, Euphorbiaceae, and Apocynaceae (8). Systemic symptoms may be caused by alkaloids or glycosides absorbed through the respiratory tract or food, or occasionally by skin abrasions (8). Ash from plant wood can accumulate heavy metals, such as chromium or arsenic.

A study reported neurological and skin poisoning following seasonal exposure to arsenic from burning chromium-copper arsenate wood (9)

The ash contains large quantities of potash which is a powerful irritant if its concentration is right (4). In Turkey and Brazil, researchers have tested potassium hydroxyl solutions to treat *Molluscum contagium* in children; the studies showed that the solution was effective and may present a low-cost alternative, however, skin irritation and burns were observed at concentrations above 10% (10), (11). In the literature, a reported case confirms the hypothesis that the rash is related to the use of ash; a woman with HIV in Burkina Faso had necrotic epidermal detachments almost generalized following the use of a potash solution, prepared from the ashes of wood plants (4).

The pharmaceutical analysis, literature search, and imputability score calculation according to the French method of Bégau (12), revealed that imputability was plausible with a score (12). All reported data question the relationship between ash and the occurrence of the adverse effect cited. Despite the many reported cases in the literature cited above on the effects of wood ash, there is no pharmacological explanation for the effect report, investigations can provide conclusive answers.

Conclusion

Traditional treatments have been proving their effectiveness since ancient times, however misusing and not knowing the composition of preparations and their mechanism of action can lead to adverse effects.

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