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## **Skin Burn After Applying Garlic Occlusion. A Case Report.**

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**ABSTRACT:** Naturopathy is a relatively new medical approach which combines different traditional remedies and health care practices. Tinctures, compresses, teas and other medicinal forms are used. The main sources are herbs and plants. However, their inept application often leads to unwanted side effects such as bleeding, gastrointestinal disturbances, allergic reactions, fatigue, dizziness, confusion, dry mouth, photosensitivity, hypertension, rash and a lot of others. Among the most frequently used naturopathic remedies is garlic. In parallel with its many good effects, allergic reactions and skin burns are not infrequently described. In this report, we present a case of second-degree skin burn on the dorsal lower leg caused by the use of crushed garlic over a short period of time.

**KEYWORDS:** chemical burns, crushed garlic, naturopathic medicines

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### **INTRODUCTION**

Naturopathy, also called naturopathic medicine, is a form of alternative medicine. It includes a wide range of pseudo-scientific practices touted as 'natural', 'non-invasive' or promoting 'the body's self-healing'.(1) The list of useful natural products is extremely long. A number of conditions and diseases respond satisfactorily to this type of therapy. It should be mentioned that these products are not regulated for potency and purity (2). Among the most frequently used naturopathic remedies is garlic. The first skin burn caused by garlic was described in the scientific literature even in 1987(3). We found quite a few described cases of chemical burns and/or contact allergies as an adverse reaction to garlic application on different parts of the body and at different severity.

### **PRESENTATION**

We present a 65-year-old female patient who was hospitalized for redness, edema, ulcer and pain on the skin on the posterior surface of her left lower leg. A few days earlier she applied a crushed garlic dressing on this place, after an insect bite for not longer than 15 minutes. In less than an hour, at the site of application of the bandage, the skin in the area became very red, began to steam and filled with fluid, forming a tense blister. In a short time, the skin of the blister broke open and an extensive ulcer which slightly moistened with a transparent yellowish liquid was formed. The dermatologic status showed a polymorphic, localized rash represented by an oval-shaped ulcer measuring approximately 10 x 7 cm area, covered by a serofibrinous indumentum in the left lateral half, slightly raised erythematous margins, haemorrhagic crusts and discrete lamellose scales at the periphery. The skin was warm and painful to the touch.



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### Fig. 1 Contact dermatitis caused by a garlic compress.

No deviation was observed in the blood count, the biochemical parameters were also normal. Treatment includes cleaning the necrotic tissues of the wound and applying antibiotic therapy with Ceftriaxone in combination with Liniment locally twice a day. On the second day of treatment, the ulceration stopped oozing. Gradually, the perilesional redness faded, the swelling subsided. Initial epithelization was established in the area. An extensive pink macula covered with delicate epithelium was observed. Ten days after this non-surgical treatment, the wound was completely healed. Allergy testing to the chemical components of garlic conducted a week after recovery was negative.

### DISCUSSION

In the last decade, the use of alternative medicine has become increasingly popular (4). Undeniable and time-proven is the fact that naturopathic remedies have the number of benefit effects on the health. Among the most frequently used as herb is Garlic (*Allium sativum*, Alliaceae). It is used in many areas of medicine for protection against the common cold and the ability to help lower blood pressure and cholesterol levels. In dermatology its use is mainly connected with alopecia areata, pain and pruritus relief (5, 13). The preferred forms of herbal treatment are creams and pastes - among which is 'crushed garlic' (6). It should be noted that there are a number of reported cases of side effects from topical application of garlic in the literature. Among the most common are chemical burns of the skin (7-10). The main reason as well as the scientific explanation for this is the chemical composition of garlic: diallyl disulfide, allicin, and allylpropyl disulfide. Exposure to these chemicals leads to coagulation necrosis. Previous studies have reported exposure times of no less than two hours (11). In our case, the burn occurred in a very short period of time - less than an hour. Additional factors determining the degree and severity of the burn are skin photo type, anatomical area, comorbidities. Characteristics of the product itself as freshness and concentration should also be taken into account (12).

### CONCLUSION

We report a case of severe chemical burn following application of garlic administered under occlusion. It should be noted that natural therapies such as garlic may cause systemic or local adverse reactions, even with short duration of contact. With this case we would like to emphasize that alternative means of treatment must be applied with extreme care, bearing in mind that alongside their good qualities they can also initiate adverse events.

### REFERENCES

- 1) <https://bg.wikipedia.org/wiki>.
- 2) Cupp MJ. Herbal Remedies: Adverse Effects and Drug Interaction. AAFP 1999;59(5):1239-1244
- 3) Al-Qattan MM. Garlic burns: case reports with an emphasis on associated and underlying pathology. Burns. 2009 Mar;35(2):300-2. doi: 10.1016/j.burns.2008.01.004. Epub 2008 Apr 11. PMID: 18406535.
- 4) Snider P, Zeff J. Unifying Principles of Naturopathic Medicine Origins and Definitions. Integr Med (Encinitas). 2019 Aug;18(4):36-39. PMID: 32549831; PMCID: PMC7219457.
- 5) Pazyar N, Feily A. Garlic in dermatology. Dermatol Reports. 2011 Apr 28;3(1):e4. doi: 10.4081/dr.2011.e4. PMID: 25386259; PMCID: PMC4211483.
- 6) Keles MK, Bayram Y, Durmus M. How fast can a naturopathic medicine cause skin burn? a case report of garlic burn. Ann Burns Fire Disasters. 2015 Sep 30;28(3):228-9. PMID: 27279812; PMCID: PMC4883610.
- 7) Madke B, Das A. Garlic Burn: A Home Remedy Gone Wrong. Indian Dermatol Online J. 2021 Jun 20;12(4):634-635. doi: 10.4103/idoj.IDOJ\_622\_20. PMID: 34430482; PMCID: PMC8354410.
- 8) Kaçar CK, Kiliç ET, Akelma H, Uzundere O, Kaydu A, Gökçek E. Medical Folk Remedy: Two Cases of Garlic Burns. J Burn Care Res. 2019 Jan 1;40(1):133-135. doi: 10.1093/jbcr/irx042. PMID: 29931078.
- 9) Sharp O, Waseem S, Wong KY. A garlic burn. BMJ Case Rep. 2018 Jul 3;2018:bcr2018226027. doi: 10.1136/bcr-2018-226027. PMID: 29973413; PMCID: PMC6040548.
- 10) Hitl M, Kladar N, Gavarić N, Srđenović Čonić B, Božin B. Garlic burn injuries- a systematic review of reported cases. Am J Emerg Med. 2021 Jun;44:5-10. doi: 10.1016/j.ajem.2021.01.039. Epub 2021 Jan 31. PMID: 33571752.
- 11) Friedman T, Shalom A, Westreich M. Self-inflicted garlic burns: our experience and literature review. Int J Dermatol. 2006 Oct;45(10):1161-3. doi: 10.1111/j.1365-4632.2006.02860.x. PMID: 17040429.
- 12) Xu S, Heller M, Wu PA, Nambudiri VE. Chemical burn caused by topical application of garlic under occlusion. Dermatol Online J. 2014 Jan 15;20(1):21261. PMID: 24456964.
- 13) Maluki HA, Mahmood TA, Hadi NQ et al. Treatment of Alopecia Areata with Topical Garlic Extract. Kufa Med. Journal 2009. VOL.12.No1.