

Garlic: Friend or Enemy?

Sarımsak: Dost mu, Düşman mı?

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ABSTRACT

Garlic is a healthy vegetable usually used as a food flavor and also as a traditional medicine. Besides its health benefits, if used uncontrollably and unconsciously, it can cause serious side effects. Local chemical burn is one of its unwanted reactions. But with appropriate and timely treatment, complete recovery can be obtained. In this case report, we discuss a chemical garlic burn of a female patient after the local application of raw garlic on her left knee.

ÖZET

Sarımsak, genellikle yemeklerde lezzet verici ve aynı zamanda geleneksel bir ilaç olarak kullanılan sağlıklı bir sebzedir. Kontrolsüz ve bilinçsizce kullanılırsa sağlığa yararlarının yanında ciddi yan etkilere neden olabilir. Lokal kimyasal yanık istenmeyen reaksiyonlarından biridir. Ancak uygun ve zamanında tedavi ile tam iyileşme sağlanabilir. Bu olgu sunumunda, sol dizine çiğ sarımsak uygulandıktan sonra yanık oluşan bir kadın hastayı tartışıyoruz.

Key Words:

Garlic,
Emergency Service,
Burn

Anahtar Kelimeler:

Sarımsak,
Acil Servis,
Yanık

INTRODUCTION

Garlic (*Allium sativum*) is a vegetable of the Alliaceae family and is known as a flavoring spice and a herbal remedy (1-3). It has been used to treat hypertension, hypercholesterolemia, infection, diarrhea, diabetes, rheumatological, and heart disorders (1-14). Experimentally its antihypertensive, antihyperlipidemic, antineoplastic, antipyretic, antifungal, larvacidal, antibacterial, immunostimulant, and hypoglycemic effects has been reported (1-13). Besides these effects, it can be irritant after topical dermatological use and even cause severe skin burns. On the other hand, oral crushed fresh garlic cloves and topical alcoholic and aqueous garlic extract could also improve the burn wound healing process (10-12,15). Case reports with cutaneous manifestations like severe chemical burns are few (1-13). But depending on the concentration, freshness, time of exposure, being applied under a pressure bandage or not, dermatological features of the anatomical region, and individual reactivity, it may either cause contact dermatitis or occasionally a deeper chemical burn (16). We report a female patient who had a chemical burn after local application of crushed raw garlic on her left knee.

CASE

A 55-year-old female patient applied crushed raw garlic over the medial side of her left knee for treating her chronic pain caused by an old fracture. She wrapped the garlic paste with plastic bandage and wait for seven

hours. When she opened the dressing, she saw rash and blisters. She drained the blisters by herself and referred to our hospital (Figure 1). Her vital signs were stable. After the examination, we found a vesiculobullous erythematous eruption as large as 10*10 cm at the anteromedial side of her left knee. The cutaneous eruption is accepted as a second degree burn with a size of approximately %2-3 of total body surface. The blisters were punctured, and debridement of the epidermolitic wound is established.



Figure 1: Garlic burn to the anteromedial aspect of the knee.

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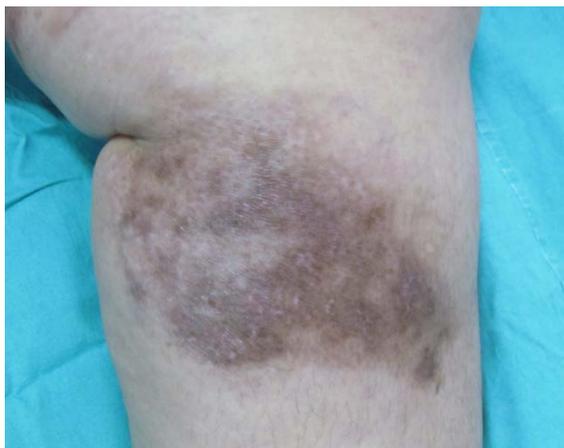


Figure 2: Complete healing with hyperpigmentation.

We applied tulle grass (sterile dressing with vaseline) and wet sterile dressing on the affected area. The patient had daily dressing for ten days. After the start of epithelization on the field, we applied a cream, including dexpanthenol, on the lesion. After two weeks, she had a complete recovery with hyperpigmentation (Figure 2).

DISCUSSION

Garlic (*Allium Sativum*) is an ancient naturopathic remedy for a variety of illnesses in many cultures. Hippocrates used it to treat leprosy, intestinal disorders, and chest pain (1-4). Dioscorides supposed that garlic is clearing the arteries (1). Avicenna had suggested that garlic extract is useful in infections (10). In the Middle Ages, it was consumed as a prevention against the plague (1,3,4). From Roman times until World War I garlic poultices are used for a larvacidal medicine (1). During World War II, garlic was used to prevent infections after it had run out of antibiotics, so garlic was called "Russian Penicillin" (1,2,4). It has been shown that garlic affects fibrinolytic activity, lower cholesterol, glucose, and blood pressure levels. (1-5). Also, there are many in vitro, and in vivo studies that show garlic extract, preparations have antioxidant effects (10,13,15). Aged garlic prevented aging, liver damage, and cardiovascular disease (13,17). In an experimental study, Kyolic aged garlic extract was effective in modulating most adverse effects induced in rats by malathion and carbaryl, and it is suggested as a dietary supplement for people exposed to insecticides intoxication (17).

It's been reported that topical usage of aqueous garlic extract could ameliorate the burn wound healing process in the dog, rabbit, and rat (10,12,14,15). The sulfur-containing compounds of garlic named the

thiosulfates are probably responsible for its therapeutic effects (10).

Raw and crushed cloves of garlic is a potent irritant, and local applications under occlusive dressings are more influential (2-5). Its adverse effects include the induction of local and systemic reactions, such as contact dermatitis, bronchospasm, diarrhea, nausea, vomiting, and hypoglycemia (13). Cases of spontaneous epidural hematoma and platelet dysfunction, leading to postoperative bleeding, are also reported (6-8). Garlic contains diallyl disulfide allyl propyl disulfide and allicin, which can cause contact dermatitis, and it has been suggested that diallyl disulfide is responsible for the chemical burn with prolonged exposure (1-5).

Factors such as the concentration of the garlic, whether the garlic is raw or not, the duration of exposure, the thickness of the skin, pre-existing health conditions, and the fact that it was wrapped tightly under occlusive dressings effects the development of burn (2-7).

Prior case reports tell that for burn formation, the exposure time must be more than 8 hours (18). In one of the case, it was just 4 hours, probably because of the salt added to garlic burn formation was quicker (19). In another case, just one hour was enough for skin burn, but this case was 80 age-old, and the application area was the face, so the skin was thinner and more sensitive (2). In our case, it was 7 hours. Probably because of occlusive dressing, it was a little shorter than the literature (19).

The treatment of garlic-related burns involves the use of topical antibiotics, steroid ointments, and cool compress application (1-5). We just used sterile wet dressing with tulle grass until epithelization.

In one of the cases, total healing was within one week of combined therapy with a topical antibiotic, steroid, and antihistaminic ointments (16). It was more rapid than our case, maybe because it was smaller, less profound than ours, and it was on the neck, so the skin feature is different. In one diabetic and septic case, which required inpatient admission to the burn unit, the resolution of the lesion took four weeks (4). But in the other cases, the recovery was usually within about two weeks, like in our case (1,5,13,18).

CONCLUSION

The present case showed that crushed raw garlic, when unconsciously contacting the skin for a long time, could cause severe burns. This burn is caused by irritation made by sulfur-containing components of garlic. Our case demonstrates that health workers who practice in a cross-cultural setting should know that herbs like garlic may be used by patients and should be aware of the side effects of these herbs.

Conflicts of Interest

All other co-authors have no conflicts of interest.

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