

# Chemical Burns in Dogs

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## In the Literature

Kawalilak LT, Fransson BA, Alessio TL. Management of a facial partial thickness chemical burn in a dog caused by bleach. *J Vet Emerg Crit Care (San Antonio)*. 2017;27(2):224-231.

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## FROM THE PAGE ...

Topical exposure to alkaline solutions (eg, bleach, detergents) can lead to severe chemical burns. Alkali burns are characterized by liquefactive necrosis of skin and subcutaneous tissues. Severity depends on duration of contact. As necrosis of superficial dermal layers occurs, alkaline solution can infiltrate underlying tissues and cause deep tissue injury. Alkalis can also lead to cell death and cutaneous protein coagulation. Without prompt removal, alkaline solutions often lead to full-thickness burns. Onset of pain is delayed 24 to 48 hours after exposure due to tissue-injury progression.

Chemical and thermal burns are characterized by depth and size. Depth determines the mechanism of tissue healing and whether surgical intervention is necessary. Burn size is measured by percent body surface area (BSA) involved. Local burns involve less than 20% BSA, whereas severe burns involve more than 20% BSA and result in severe metabolic derangements and shock. Local burns require wound care. Severe burn injury also requires resuscitation to address blood pressure, acid base, volume, and electrolyte derangements.<sup>1</sup>

This case report described successful management of extensive facial and corneal chemical burns sustained after topical bleach exposure in a dog. The burns occurred after the dog inserted its face in a toilet bowl that had recently been cleaned with a concentrated bleach solution. Conservative management included limited surgical debridement of affected epithelium 11 and 22 days after initial exposure. Topical ocular medications, corneal debridement, and superficial keratectomy were also used. Lesions were completely resolved by 84 days postexposure, with no residual effects on patient quality of life.

## ... TO YOUR PATIENTS

Key pearls to put into practice:

- 1** Areas exposed to alkaline agents should immediately be lavaged with cool water to dilute the irritant. Irrigation should continue for at least 10 minutes and can be continued for as long as one hour. If ingestion is suspected, emesis should not be induced. Water or milk should be administered to dilute the alkaline agent in the GI tract.<sup>2</sup>
- 2** The 3 keys to treating a burn are wound care, analgesia (eg, oral or IV opioids, NSAIDs), and an Elizabethan collar to prevent self-trauma. Wound care should include prophylactic oral antibiotics to prevent opportunistic infection, topical therapy to prevent bacterial colonization and promote wound healing (eg, silver sulfadiazine, Tris-EDTA, honey, hydrogels, hydrocolloids), selective debridement of necrotic tissue, and bandaging to prevent wound contamination and prolong contact time with topical therapies.
- 3** Owners often report that burns are pruritic. This can be mitigated with oral antihistamines and massage of the burned area. Untreated pruritus can lead to self-trauma.

## References

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2. Rosendale ME. Decontamination strategies. *Vet Clin North Am Small Anim Pract*. 2002;32(2):311-321.



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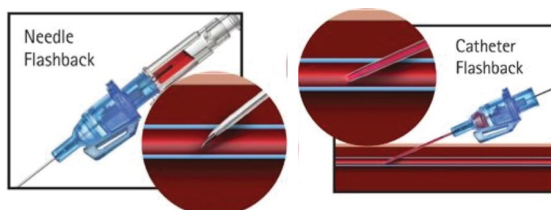
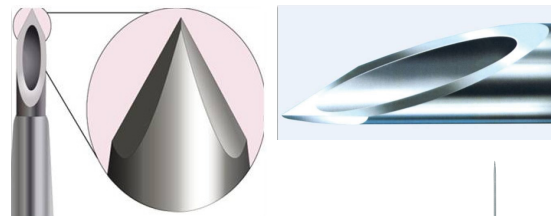
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