

# Dermatologic Emergencies

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*Although dermatology may be regarded as a medical specialty with few emergencies, they do exist and range from primary cutaneous disorders to severe systemic conditions with skin manifestations. Prompt recognition for appropriate diagnosis and treatment often is necessary to improve a patient's prognosis and a single decision can mark the difference between life and death.*

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**D**ermatologic emergency may sound like an oxymoron, but there are many emergencies that dermatology residents may encounter in their careers. In some instances the skin is the primary organ that is affected, while in others cutaneous symptoms and life-threatening signs are important diagnostic clues for what may lie beneath the skin.

As residents who are occasionally on call or on consultation services, it is important for us to recognize dermatologic emergencies quickly because some of these conditions can acutely evolve and become lethal if a diagnosis is not made early in the disease course with the appropriate treatment administered. Dermatologic emergencies can range from severe drug reactions, infections, autoimmune exacerbations, and inflammatory conditions (eg, erythroderma) to environmental insults such as burns (Figure 1) and child abuse.<sup>1</sup>

## Critical Infections

Some dermatologic emergencies are infectious in origin, and although these infections are most

commonly bacterial (eg, necrotizing fasciitis), they also can range from viral to fungal (eg, mucormycosis) in nature. Some areas with large populations of immunocompromised patients (eg, human immunodeficiency virus–positive patients, organ transplant recipients) may warrant a high index of suspicion for possible zebras (rare conditions) and opportunistic infections that may quickly escalate to life-threatening situations.

Although few cutaneous manifestations in emergent infections are pathognomonic, they sometimes can be categorized according to the appearance of the primary lesion: erythrodermic (eg, staphylococcal scalded skin syndrome), maculopapular (eg, Lyme disease), purpuric/petechial (eg, Rocky Mountain spotted fever), pustular (eg, disseminated candidiasis), or vesicular



**Figure 1.** A second-degree burn with associated severe pain, tenderness, serous-filled bullae, deep rubor, erosion, and exudation of the chest.

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(eg, neonatal herpes simplex virus)(Table). On consultations, dermatology residents frequently get called to evaluate hemorrhagic and ischemic lesions in inpatients (Figure 2). Aside from infectious causes, the differential diagnosis may include coagulation abnormalities (eg, concurrent anticoagulant therapies), vasculitides, poisoning, vascular disease, or Stevens-Johnson syndrome and toxic epidermal necrolysis, which can occasionally present with hemorrhagic lesions.<sup>1,2</sup>

**Necrotizing Fasciitis**—Dermatology residents may frequently encounter necrotizing fasciitis, either in clinic or on the wards (Figure 3). Recognition of the skin signs in this condition is essential to patient survival. As an intern, I once had an attending teach me that patients with necrotizing fasciitis only have a couple of hours to live. The rapid unfolding of this flesh-eating disease and its high morbidity and mortality has led to recent attention in the press and media.

Although necrotizing fasciitis may be caused by several different bacterial organisms (eg, gram positive, gram negative, polymicrobial), it usually is rapidly progressive, destroying muscle and subcutaneous tissues in a matter of hours.<sup>3</sup> Bacteria usually enter through a traumatic or present wound and quickly move along fascial planes, destroying blood vessels and whatever subcutaneous tissues happen to be in the way. Within the first few hours, the



**Figure 2.** Cutaneous signs of iatrogenic, vasopressor-induced ischemia; gangrene of the distal digits of the left hand; and pronounced demarcation of vessels, as well as a vascular indication of thrombosis and lack of blood flow to the affected areas.

involved area that was initially erythematous becomes indurated, woody, extremely painful, and dusky, indicating a lack of circulation to the area. Extensive debridement is required until reaching noninfected tissue that is no longer purulent, necrotic, or woody to the touch. If necrotizing fasciitis is not diagnosed and treated early, patients may lose one or several limbs and death may occur.

Key findings of necrotizing fasciitis include systemic toxicity, localized painful induration, well-defined dusky blue discoloration, and a lack of bleeding or purulent discharge on incision and squeezing of the affected tissue. Crepitation or a crackling sensation can occasionally be felt when palpating the area secondary to gas formation in the tissue, though it is not always present. Patients with necrotizing fasciitis often initially present to dermatology clinics because the first



**Figure 3.** Necrotizing fasciitis of the left forearm following debridement of the skin, subcutaneous tissue, and fascia, revealing the remaining muscle, tendon, and bone.

## Cutaneous Manifestations of Dermatologic Emergencies

Primary Lesion	Condition
Erythroderma	Atopic dermatitis Mycosis fungoides Pityriasis rubra pilaris Psoriasis Staphylococcal scalded skin syndrome
Morbilliform eruption	Disseminated fungal infections Drug reactions <i>Rickettsia</i> Toxoplasmosis Viral exanthems
Palpable purpura	Henloch-Schönlein purpura <i>Neisseria</i> septicemia Vasculitides
Petechiae	Endocarditis Malaria Rocky Mountain spotted fever Thrombocytopenia Tickborne illnesses Viral hepatitis
Pustules	Disseminated candidiasis Herpes simplex virus <i>Staphylococcus</i> species
Vesicles	Neonatal herpes simplex virus Smallpox Vaccinia virus
Violaceous, dusky discolorations	Gangrene <i>Mucor/Rhizopus</i> Necrotizing fasciitis

manifestation happens to be in the skin. The role of dermatologists in treating this critical condition may prompt recognition and collaboration with other specialists to reach a viable outcome for the patient.<sup>3</sup>

### Drug Reactions

Cutaneous drug eruptions usually are relatively benign, consisting of a morbilliform eruption often without any other accompanying symptoms. However, sometimes these reactions can present as exfoliative dermatitis or red man syndrome in



**Figure 4.** Retained bullet extracted from the back of a patient 4 years following the initial insult.

which patients can develop total body erythema with diffuse scaling and pruritus.<sup>4</sup> Aside from drug reactions, other causes of exfoliative dermatitis such as psoriasis, atopic and seborrheic dermatitis, mycosis fungoides, and lymphoma should be ruled out. Other drug eruptions that can be classified as dermatologic emergencies include leukocytoclastic vasculitis, severe urticaria or angioedema, erythema multiforme, or Stevens-Johnson syndrome and toxic epidermal necrolysis.

### Severe Acne

If not treated promptly, serious cases of acne can lead to severe scarring and psychologic problems. Acne fulminans is characterized by a rapid eruption of suppurative and large, highly inflamed nodules, plaques, and cysts that result in ragged ulcerations and cicatrization of the chest, back, and occasionally the face. Systemic symptoms of fever, arthralgia, leukocytosis, and myalgia suggest an upregulation of the immune system in affected patients.

### Final Comment

In summary, dermatologic emergencies do exist and some may present with characteristic skin findings. In almost all cases, collaboration with other departments such as trauma, burn, internal medicine, rheumatology, and infectious diseases is extremely helpful in diagnosing and treating these medical emergencies. Collaboration can provide insight into how brainstorming through different approaches can lead to a better outcome whether it be solving the cause of a puzzling rash in a patient with multiple

comorbidities or surgically removing a bullet from a trauma patient (Figure 4). Recognition of specific cutaneous manifestations and early diagnosis of dermatologic emergencies can be lifesaving.

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