

SOME COMMON (AND UNCOMMON) SKIN PROBLEMS IN DIVERS

Bruce Miller, MD

(Dr. Miller, a Dermatologist, is a Consultant for Diving Medicine Online. This is a lecture presented to Medical Seminars, 2000)

Travel to the tropical climes can often aggravate preexisting skin problems as well as expose us to new hazards. Here is a review some of the more common ones and suggestions for some treatment approaches.

Tropical Acne and Hidradenitis Suppurativa:

Heat and humidity, along with the chafing of the dive gear and wet suit, can aggravate a preexisting cystic acne condition. Severe acne flares on the shoulders and back can be quite painful and lead to scarring. Large cysts in the groin and/or axillae can also occur. If a diver has a history of cystic, conglobate acne, and/or hidradenitis, it would be wise to be sure that these conditions are in a state of long-term remission. Otherwise, treatment with a course of Accutane should be considered well before the trip. If a flare occurs while on the trip, incision and drainage under local anesthesia, intralesional steroid injections, a short course of prednisone 40 mgm/day, and coverage with cephalexin should all be considered.

Atopic Dermatitis, Neurodermatitis, and Xerotic Eczema:

All these eczemas are characterized by dry, itchy skin. Paradoxically, repeated immersion in water, while temporarily hydrating the skin, in the long run dries it out because of loss of oils from the stratum corneum. In addition the climate may superimpose a prickly heat problem on top of the dryness, causing more pruritus.

Treatment consists of mild soap, don't over bathe, lubricate after your shower, and a good fluorinated topical steroid once or twice a day. Severe flares can be managed with prednisone or 40 mgm of Kenalog and 1 cc of Hexadrol IM.

Allergic Contact Dermatitis:

There are numerous opportunities for exposure to various allergens on dive trips. The prototypical eruption is the weeping, severely pruritic, edematous reaction from exposure to poison oak or ivy. However, there are other members of this family lurking in the background. Mango rinds, Japanese lacquer and cashew nut trees, and the marking nut trees of India contain the catechol antigen (urushiol) and cause the same reaction.

Neomycin, benzocaine and its relatives, rubber accelerators in the neoprene rubber of your wet suit, and delayed hypersensitivity reactions to hydroid stings can all cause contact dermatitis. Milder cases may respond to a high-potency topical steroid (e.g., Ultravate, Temovate, or Diprolene). More severe reactions need to be treated with prednisone. It's important not to chase the disease with the dose. A typical regimen would be 60 mgm QDX4, then 40 mgm QDX6 to start.

Fungal Infections (Tinea cruris, corporis, and pedis):

If you have preexisting “athlete’s feet” (T. pedis) or “jock itch” (T. cruris), I can almost guarantee that these conditions will flare under the humid, soggy, wet conditions associated with diving. Carefully drying the affected body parts after your shower by using a hair dryer, followed by some talcum powder, and applying a good topical antifungal, such as Mentax, may well prevent a flare. If the problem won’t respond to topical therapy alone, add in an oral antifungal, such as Sporanox or Diflucan. For persistent nail involvement (onychomycosis), use Lamisil QD for 90 days.

Tinea Versicolor:

A harmless superficial fungus known as *M. furfur*, it is mainly of cosmetic significance. Areas of involvement appear lighter than the surrounding skin in the summer due to blockage of the tanning rays. During the winter, the situation is reversed and the involved spots are reddish-brown and darker than the surrounding skin. Occasionally, people complain of itching, but usually this is an asymptomatic problem. Typically, heat and humidity aggravate the condition. Treatment consists either of a topical application of Selsun shampoo for 5 minutes QD for 7-10 days or 2 weeks QD of one of the oral antifungals. How do you tell the difference? KOH prep shows “spaghetti and meatballs” = hyphae and spores.

Candidiasis (monilia, yeast) :

Usually seen in infants with diaper dermatitis, it can appear in adults. Diabetics and persons on broad-spectrum antibiotics are susceptible to this opportunistic organism, which is usually peacefully coexisting with the bacteria in our GI tract. Thrush, diarrhea, candidal vaginitis, and intertrigo can result from its overgrowth. The best treatment is an oral antifungal/yeast drug that will work within a few days, (eg., Nizoral, Sporanox or Diflucan). How do you tell the difference between these similar appearing intertrigos? Do a KOH and culture. Actually, don’t do it yourself. send the patient to a Derm.!

Erythrasma (a corynebacterium):

Usually seen only in diabetics. The KOH and culture are negative. Diagnosis is made by the process of elimination and characteristic fluorescence under Wood’s light. Treatment is oral erythromycin in any of its various forms.

Trichomycosis Axillaris (a gram positive organism):

Responds well to topical antibiotics, e.g., cleocin-T.

Hot Tub Folliculitis:

Pseudomonas infection of the hair follicles, usually found only in poorly-maintained hot tubs in private settings. It can be quite extensive and uncomfortable, so I routinely treat it with Cipro. 500 mgm BID X 1 week.

Pyodermas:

These are far and away the commonest types of skin infections I see on dive trips, not only in divers, but also in the indigenous population.

a) Impetigo, the most superficial of these infections, is usually caused by a gram +, penicillin-resistant staph. aureus, rather than beta-hemolytic strep., though occasionally there is a mixed infection. So here in the USA, I usually treat with cephalexin or dicloxacillin. In some of the less developed countries, where antibiotics are few and far between, almost any drug active against gram+ organisms seems to work well. In Yap recently, I incised an axillary abscess in one of the dive guides and gave him some Keflex with instructions to get more at the hospital pharmacy. He ended up with Tegopen (cloxacillin) 500 mgm

Q6H, the poorly absorbed predecessor to diclox.

b) Furuncles, usually due to staph., resemble small abscesses involving hair follicles, usually on the face or neck. If large enough, they should be incised and drained, as well as treated with antibiotics

c) Ecthyma is a deeper infection extending down into the subcutis and having draining sinuses. Certainly a more severe infection and again usually due to staph. aureus. This needs to be treated aggressively to prevent a rapidly-developing cellulitis and possible bacteremia.

d) Cellulitis/erysipelas is usually due to beta-hemolytic strep. and therefore can be treated with penicillin, but obtaining a culture is difficult. It often starts from a small break or fissure in the skin. "Skip cellulitis", of the lower leg is due to fissures between the toes from tinea pedis, serving as a portal of entry for the strep.

e) Abscess formation is also usually due to staph. This problem should be treated with surgical drainage as well as cephalexin or dicloxacillin.

f) Pseudomonas otitis externa. This is a real mess that could have been prevented by prophylactic use of Domeboro Otic after each dive. Be sure that the diver hasn't been using Cortisporin Otic, which contains neomycin. I've seen allergic contact dermatitis to Neomycin with secondary infection look this bad. Treatment is Domeboro soaks and Cipro.

g) Some miscellaneous skin infections due to organisms peculiar to the ocean or aquatic environment: aeromonas hydrophilica, vibrio vulnificans, protothecosis, and mycobacterium marinum (swimming pool/fish tank granuloma).

Vibrio Vulnificus is typically present in warm salt water. It can infect shellfish and, when ingested, can cause gastroenteritis or bacteremia in people with hepatic cirrhosis. It's also an opportunistic infection that, after trauma to the skin, can result in a severe form of cellulitis.

Aeromonas hydrophilica is present in fresh or brackish waters. It's a gas producing organism and can cause cellulitis with crepitus.

Both can cause cellulitis with bullae, necrotic ulcers, and deeper soft tissue involvement, which can lead

to gram-negative sepsis.

Treatment consists of Cipro.

M. Marinum is an acid-fast bacillus that can be identified by an AFB stain on biopsy. A good history and exam doesn't hurt either. Treatment consists of minocycline 100mgm BID X 30 Days or more.

Herpes Simplex Virus (HSV) I and II: are frequently activated by sun exposure, colds, stress, and who knows what else? These outbreaks can certainly make your trip miserable

for a few days. If you're susceptible to them, use chap stick with a sun screen, although lipstick and zinc oxide work better because they stay on the skin. It's also wise to carry a supply of Valtrex, Famvir, or Zovirax along with you on all trips. Start taking the drug at the first sign that you are developing an HSV outbreak

Insect bites: Fleas, mosquitoes, chiggers, bedbugs, no-see-ums, ticks, pediculosis, scabies, biting flies, etc., are found all over the world and remain as a constant reminder that humanity does not always control Mother Nature. Aside from the rather dramatic bullous and hemorrhagic variants seen particularly in children, they serve as the vector for many unpleasant diseases.

Insect repellents, long sleeves, no perfumes, etc., all help but there is no way that you can completely escape. Most bites cause some itching, which is self-limited. A good topical steroid can help for the day or two it takes to resolve. Extensive bites can be treated with prednisone.

Creeping Eruption: This is caused by the larvae of the dog/cat hookworm (*ancyclostoma* sp.) that can't complete its life cycle in humans. It's endemic in certain parts of Florida. The message here is to wear sandals at all times and don't step in the shit. Treatment consists of topical or oral thiabendazol, a broad-spectrum anti-helminthic.

Miliaria (prickly heat): This is due to eccrine sweat gland occlusion. It used to be a common problem in the tropics before the advent of widespread air conditioning. Rupture of the sweat gland at different levels creates the different clinical presentations: superficial leads to miliaria crystallina, deeper leads to more inflammatory lesions, miliaria rubra.

Treatment consists of moving the person into a cool environment and possibly topical steroids. This condition is mainly seen nowadays in infants whose parents overdress them for bed.

Cnidarians:

a) Phillipines box jellyfish-cubozoan envenomation. During his tour of duty there, Dr. Reed reports that two children died from contact with this jellyfish while wading. Its related to the Australian box jellyfish, *Chironex fleckeri*, but usually not as lethal. No anti venom is available.

b) Sea bathers eruption: caused by the larvae of the thimble jellyfish (*linuche unguiculata*). This patient of mine had been snorkeling off the Cozumel coast. Note the typical distribution under her bathing suit. It consists of severely pruritic, urticarial papules. It's also endemic off the coast of Florida.

Treatment is the same for all hydroid stings: spraying the affected area(s) with alcohol or vinegar and avoidance of fresh water or trauma to the areas till the nematocysts have been inactivated.

Dr. Auerbach has obliquely referred to this in several articles, but I want to emphasize that a delayed hypersensitivity, contact dermatitis, poison oak/ivy type of allergic reaction COMMONLY develops after exposure. If it's the first time, it may take several days. If it's a subsequent exposure, after you've been sensitized, this eczematous,

severely pruritic reaction may appear within hours. At this point, treatment usually requires systemic steroids in the dose previously recommended.