CLINICAL IMAGES

My Feet Are Killing Me: A Hiker's Journey

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A 55-y-old male presented to the emergency department of Saint Louis University Hospital in late spring with 2 d of burning bilateral foot pain and difficulty walking. The patient had been backpacking for the past week, camping on the sides of the trail at night. The symptoms started after his footwear became wet when he forded a creek. He admitted to being a novice outdoorsman with little formal training or experience hiking before starting the trip. At the time of year, average daily temperatures range to a high of 26.5°C (80°F) during the day and a low of 15.5°C (60°F) at night. Precipitation was approximately 5 cm (2 in) above expected for the month, and it had rained for

Figure 2. Medial right foot.

several days during his hike. [Figures 1 to 3](#) are pictures of his feet. What was the diagnosis, and how should it be treated?

Figure 1. Plantar right foot.

Figure 3. Dorsal right foot.

Diagnosis

Tropical immersion foot (TIF)

Discussion

The pictures show erythema, swelling, superficial erosions, and blisters on the soles and dorsal surfaces of the feet, consistent with the diagnosis of TIF.

Warm water immersion injuries are a possible complication of exposure to persistently wet environments. These are arguably less well-known than their cold-water counterpart, trench foot.^{1–3} The primary difference is the temperature of the water to which one is exposed. Trench foot occurs at a temperature of 0 to 15°C. TIF is precipitated by warm water exposure with temperatures ranging typically 15 to 32°C (59 to 90°F).^{4–6}

A spectrum of symptoms comprise warm water immersion injuries. Warm water immersion foot (WWIF) is the initial stage, seen in patients who have exposure of less than 48 to 72 h. The soles of the feet become white, painful, and wrinkled. The second stage, TIF, is characterized by edema and redness affecting the dorsal surfaces and the soles, with swelling and tenderness to touch over the affected skin. Greater than 72 h of exposure is typically needed to progress to TIF. Inability to ambulate owing to the severity of the pain is also a feature. Our patient's skin findings, coupled with his pain on ambulation and his prolonged exposure, indicate our patient had progressed to TIF. "Paddy foot" was described in soldiers during the Vietnam War and was initially thought to be a separate condition; however, this is likely what today we describe as TIF.^{7–9}

Treatment of WWIF and TIF is simple compared to that of trench foot.^{2,3,10} Cleansing and then drying the feet, with elevation of the affected limb(s) and limited weight-bearing, is sufficient in most cases. WWIF will typically resolve in 1 to 3 d, with TIF typically lasting 4 to 5 d because of the more advanced stage.^{4,8} Tetanus prophylaxis should be administered, and patients may require analgesics targeting neuropathic pain. The most common complication appears to be fungal superinfection, which

should be treated with topical agents. There have been no reports in the literature of long-term sequelae of either WWIF or TIF if treated properly.

Our patient was treated with drying and warming of his feet and was admitted for observation because of the pain he was having with ambulation. After 24 h, the patient's symptoms improved enough that he was discharged home with his family.

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