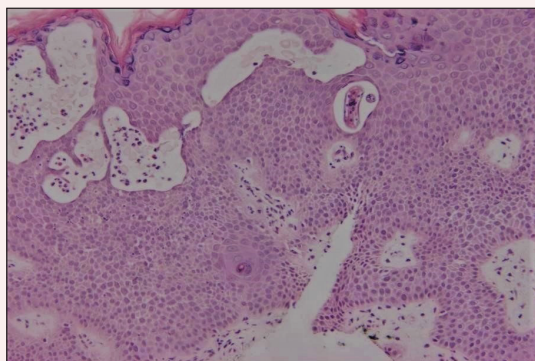


Pruritic Rash on the Buttock

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H&E, original magnification $\times 10$.

An 18-year-old man presented with a several-week history of an expanding pruritic serpiginous and linear eruption on the buttock. The patient recently had spent some time vacationing at the beach in the southeastern United States. Physical examination revealed erythematous linear papules and serpiginous raised tracks on the buttock. A biopsy of the lesion was performed.

The best diagnosis is:

- a. cutaneous larva migrans
- b. disseminated strongyloidiasis
- c. myiasis
- d. onchocerciasis
- e. scabies

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Cutaneous Larva Migrans

Cutaneous larva migrans (CLM) is caused by the larval migration of animal hookworms. *Ancylostoma braziliense*, *Ancylostoma ceylanicum*, and *Ancylostoma caninum* are the species most commonly associated with the disease. The hookworm is endemic to tropical and subtropical climates in areas such as Africa, Southeast Asia, South America, and the southeastern United States.¹ Although cats and dogs are most commonly affected, humans can be infected if they are exposed to sand or soil containing hookworm larvae, often due to contamination from animal feces.² Cutaneous larva migrans is characterized by pruritic erythematous papules and linear or serpiginous, reddish brown, elevated tracks most commonly appearing on the feet, buttocks, thighs, and lower legs; however, lesions can appear anywhere. In human hosts, the larvae travel in the epidermis and are unable to invade the dermis; it is speculated that they lack the collagenase enzymes required to penetrate the basement membrane before invading the dermis.²

On histopathology, there typically are small cavities in the epidermis corresponding to the track of the larvae.³ There often is a spongiotic dermatitis with a mixed inflammatory infiltrate following the larvae with scattered eosinophils. The migrating larvae may be up to 1 mm in size and have bilateral double alae, or winglike projections, on the side of the body (Figure 1).⁴ The larvae are difficult to find on histopathology because they often travel beyond the areas that demonstrate clinical findings. The diagnosis of CLM is mostly clinical, but if a biopsy is performed, the specimen should be taken ahead of the track.

Disseminated strongyloidiasis is caused by *Strongyloides stercoralis*. When filariform larvae migrate out of the intestinal tract into the skin, they can cause an urticarial rash and serpiginous patterns on the skin that can move 5 to 15 cm per hour, a clinical condition known as larva currens. In immunocompromised individuals, there can be hyperinfection with diffuse petechial thumbprint purpura seen clinically, which characteristically radiate from the periumbilical area.¹ On pathology, there may be numerous larvae found between the dermal collagen bundles, measuring 9 to 15 μm in diameter. Rarely, they also can be found in small blood vessels.³ They often are accompanied by extravasated red blood cells in the tissues (Figure 2).

Myiasis represents the largest pathogen in the differential diagnosis for CLM. In myiasis, fly larvae will infest human tissue, usually by forming a small cavity in the dermis or subcutaneous tissue. The larvae are visible to the human eye and can be up to several centimeters

in length. In the skin, the histology of myiasis usually is accompanied by a heavy mixed inflammatory cell infiltrate with many eosinophils. Fragments of the larvae are seen encased by a thick chitinous cuticle with widely spaced spines or pigmented setae (Figure 3) on the surface of the cuticle.⁵ Layers of striated muscle and internal organs may be seen beneath the cuticle.³

Onchocerciasis, or river blindness, is a parasitic disease caused by *Onchocerca volvulus* that is most often seen in sub-Saharan Africa. It may cause the skin finding of an onchocercoma, a subcutaneous nodule made



Figure 1. Cutaneous larva migrans with *Ancylostoma* larvae with bilateral double alae, or winglike projections (arrows) on the side of the body (H&E, original magnification $\times 40$).

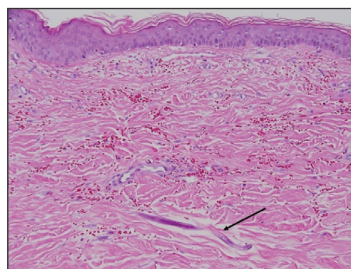


Figure 2. Disseminated strongyloidiasis with *Strongyloides* larvae migrating between collagen bundles in the dermis with extravasated red blood cells (arrow) (H&E, original magnification $\times 20$).

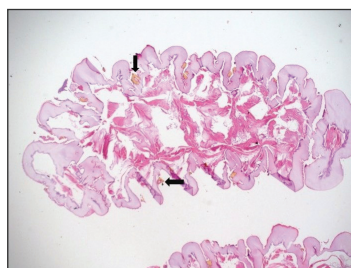


Figure 3. Myiasis larva in a patient with setae (arrows) on the surface of the cuticle (H&E, original magnification $\times 2$).

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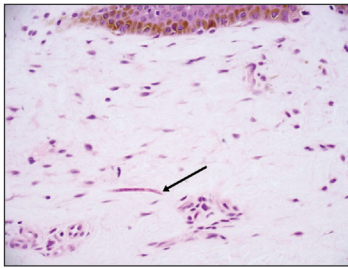


Figure 4. Onchocerciasis microfilaria (arrow) between collagen bundles (H&E, original magnification $\times 40$).

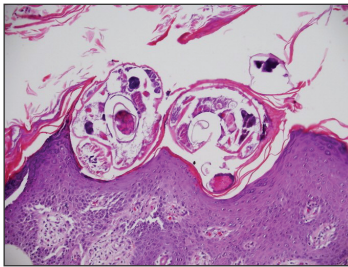


Figure 5. Scabies with pigtailed mites connected to the stratum corneum, representing egg fragments or casings left behind after the mite hatches (H&E, original magnification $\times 20$).

up of *Onchocerca* nematodes. However, when the filaria disseminate, it may cause onchocerciasis with cutaneous findings of an eczematous dermatitis with itching and lichenification.¹ In onchocercal dermatitis, microfilariae may be found in the dermis and there may be a mild dermal chronic inflammatory infiltrate with eosinophils.³ These microfilariae are smaller than *Strongyloides* larvae (Figure 4).

Sarcoptes scabiei are mites that are pathologically found limited to the stratum corneum. There often is a spongiotic dermatitis as the mite travels with an accompanying mixed cell inflammatory infiltrate with many eosinophils. One or more mites may be seen with or without eggs and excreta or scybala (Figure 5). Pink pigtailed mites may be seen connected to the stratum corneum, representing egg fragments or casings left behind after the mite hatches.³ The female mite measures up to 0.4 mm in length.³

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