Filarial Infections

Traveler Summary

This article includes onchocerciasis, loiasis, and lymphatic filariasis.

Key Points

- Filarial infections are caused by a group of worms (filariae) found throughout tropical countries and are transmitted to humans through the bite of infected flies, mosquitoes, or midges.
- Risk is generally low, especially for short-stay travelers. Risk is highest for persons with extensive outdoors exposure and travelers going to West and Central Africa.
- Symptoms are variable and include itching, rash, migratory swellings, and limb swelling.
- Consequences of infection by certain filariae may include permanent limb swelling, eye damage, and elevated white blood cell counts.
- Prevention includes wearing long sleeves and long pants as well as observing personal protective measures against bites from infected flies, mosquitoes, or midges.
- No vaccine is currently available. Diethylcarbamazine prevents loiasis in long-stay travelers but is rarely recommended.

Introduction

Filarial infections are caused by skin and tissue-dwelling worms (filariae) that are transmitted through the bites of infected flies, mosquitos, or midges in many tropical countries. Filarial worms cause little harm in the human host, but dead worms can cause an inflammatory response resulting in symptoms such as acute allergic reactions affecting the skin and underlying tissues, the lymphatic system, and occasionally the eyes.

Risk Areas

Filarial infections occur in most tropical countries, but distribution of the different types of worms is based on geographical location.

Onchocerciasis is found in the river basins and forests of tropical sub-Saharan Africa and in Yemen. Loiaisis is prevalent in the rain forests of west and central Africa (especially in Cameroon, Central African Republic, Gabon, Republic of the Congo, Democratic Republic of the Congo, and northern Angola). Lymphatic filariasis is widespread throughout tropical countries.

Transmission

Filarial infections are mainly transmitted through the bite of infected mosquitos, flies, or midges in risk areas. Onchocerciasis is especially prevalent near fast moving rivers; loiasis in forested areas; and lymphatic filariasis in urban slums. Onchocerciasis and loiasis are mainly transmitted by day-biting flies; lymphatic filariasis is transmitted by infected night-biting mosquitos (although a few bite by day).

Risk Factors

Risk is generally low for short-stay travelers because of the time needed to acquire a sufficient number of infected bites to result in disease. Risk of onchocerciasis and loiasis is higher for long-stay travelers going to affected areas during the transmission season and for persons who work extensively outdoors (such as agriculturalists, foresters, conservationists, zoologists, botanists, prospectors, miners, film crews, etc.). Risk of exposure to lymphatic filariasis is low, but travelers who sleep at night unprotected against mosquitos are at higher risk.

Symptoms

Symptoms vary according to the infecting filarial species. Symptoms often appear months or even years after exposure, at a time when the exposure to filariasis is long forgotten. Many early infections have no symptoms and are found during posttravel

medical screening done by many organizations that send long-stay travelers. Early symptoms of filarial infections may include the following:

- Onchocerciasis: severe itching of the skin that prevents sleep, eye irritation, rash, or skin nodules.
- Loiasis: joint and skin swelling that comes and goes; itchy, red, and swollen skin; or a long hairlike worm felt moving across the white of the eye.
- Lymphatic filariasis: headache, fever, and pain and swelling of lymph nodes in the arms, legs, or scrotum.

Consequences of Infection

Consequences of infection by certain filariae may include eye damage (onchocerciasis), elevated white blood cell counts (loiasis), or permanent limb or scrotal swelling (lymphatic filariasis).

Need for Medical Assistance

Travelers going to risk areas who develop symptoms of filarial infections should seek medical attention from an expert in tropical diseases because treatment involves unusual medications. Filarial infections have long incubation periods; travelers with compatible symptoms should inform their physician of their travel history (even if it was months or years ago) and the risk of filariasis. A screening blood test performed 6 months to 1 year after travel, or sooner if symptoms occur, will detect most individuals with early filarial infections. Effective treatment is available for all 3 types of filarial infections.

Prevention

Nonvaccine

Wear long sleeves and long pants and observe daytime and nighttime personal protective measures against bites from flies, mosquitoes, and midges. See ***Insect Precautions***.

Diethylcarbamazine (300 mg weekly) can also prevent loiasis in long-stay travelers, but this regimen is not suitable for short-term travelers.

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