



Clinical Manifestations and Pathogenesis of Dracunculiasis

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DESCRIPTION

The large female of the nematode *Dracunculus medinensis*, which emerges slowly and painfully from the skin, generally on the lower limbs, is what causes dracunculiasis, commonly known as guinea worm disease. Although the disease can infect animals and there are sustained animal cycles in North America and Central Asia, these regions do not serve as human infection reservoirs. After being eradicated from Asia and certain African nations, the disease is widespread throughout the Sahel region of Africa, extending from Mauritania to Ethiopia. It has a major socioeconomic effect because of the temporary disability that it causes. The only way to contract dracunculiasis is through drinking water, typically from ponds. In the 1980s, an effort to end the disease was started, and it has made great strides. The campaign's approach is outlined, including the provision of water, health promotion, case management, and vector control. Current concerns are also taken into account, such as the campaign's integration into primary healthcare and the mapping of instances utilising geographic information systems. Finally, potential takeaways for other disease eradication and control initiatives are presented.

Preemergent female worms can readily migrate through the connective tissues, but when they approach the surface, a rupture at the anterior end causes a small number of larvae to be released into the subdermis. A burning, painful blister that develops as a result of the host reaction bursts into a shallow ulcer after a few days. This causes a marked inflammatory

reaction against the cuticle of the entire worm, making removal difficult. The larvae are mostly surrounded by polymorphonuclear neutrophils, together with macrophages, lymphocytes, and eosinophils, in the bacteriologically sterile blister fluid. After removal of thousands of larvae, the end of the worm dries up, and this process is repeated a few times, with the complete worm being extruded in a few weeks. The lesion then swiftly heals. Unfortunately, in around half of all cases, the worm's track is secondary infected, leaving patients seriously disabled. In a study conducted in a region of Nigeria, 58% of patients mostly those between the ages of 15 and 49 who were working or in school were incapacitated for an average of 12.7 weeks during the yam and rice harvest. In a research conducted in Ghana, 28% of patients experienced persistent pain 12 to 18 months after the worms first appeared, and 0.5% (as in many other studies) had physical damage that was permanent, such as "locked" knees or other joints. Another study conducted in Benin found that tetanus and septicemia caused 0.3% of deaths. Sometimes female worms rupture in the tissues, leaving a massive pus-filled abscess and severe cellulitis in their wake. On a roentgenogram, infertile females or men have a mild inflammatory response and occasionally calcify.

In comparison to other parasite illnesses, dracunculiasis is uncommon in that there is minimal evidence of developed immunity and the same person can become infected repeatedly. The reaction to the expulsion of larvae suggests an Arthus reaction, followed by a postponed hypersensitivity response.

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