

Onchocerciasis (River Blindness)

Ronni Wolf MD¹, Edith Orion MD¹ and Hagit Matz MD^{2,3}

¹Dermatology Unit, Kaplan Medical Center, Rehovot, Israel

²Department of Dermatology, Tel Aviv Sourasky Medical Center, Tel Aviv, Israel

³Affiliated to Sackler Faculty of Medicine, Tel Aviv University, Ramat Aviv, Israel

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For many years, onchocerciasis did not feature among the diseases considered important by physicians in Israel and other western countries. We were relieved not to lose any sleep over it, believing that it was exclusive to Africa, Central and South America and, once we finished our medical studies, we assumed that we could forget about it and the other exotica we learned for the exams and concentrate on "real-life" diseases. However, the sudden but much-welcomed wave of immigration from Ethiopia that started in 1984 with "Operation Moses" and is still ongoing, together with the mobility provided by international air travel have led to a rise in the prevalence of "imported" diseases that were formerly restricted to the equatorial zones. This has inevitably increased the likelihood that western, and Israeli, physicians will be faced with the challenge of diagnosing and treating them.

The source [1]

Onchocerciasis is caused by the filarial parasite *Onchocerca volvulus*, whose life cycle occurs in two different hosts – black flies (*Simulium*, six sibling species) and humans. It is transmitted from one person to another through the bite of an infected black fly. The infective larvae that survive the stage of inoculation into the host differentiate into male or female adult species within 1–3 months. Adult worms mate and the female species begins to produce as many as 1,300–1,900 microfilariae each day. This daily production can continue for up to 14 years and microfilariae may live in the host for up to 2 years. Adult worms usually congregate and become encapsulated in fibrous, tumor-like masses or nodules (onchocercomata) from which microfilariae travel, mainly to the skin and eyes of the infected human host.

The disease

The clinical manifestations of onchocerciasis most commonly involve the skin, subcutaneous tissues, lymph nodes, and eyes. The characteristic onchocercomata are firm, mobile non-tender subcutaneous nodules that contain adult parasites coiled within relatively acellular fibrous tissue. These nodules are characteristically located over bony prominences, most commonly over the iliac crest and buttocks in African patients and the head and shoulders in Central American patients. Early onchocercal dermatitis may present as pruritus alone or as a generalized pruritic maculopapular eruption with asymmetric distribution. Hyperpigmentation of affected areas is also common. With the passage of time, the skin loses elasticity, becomes abnormally wrinkled and, ultimately, lichenifies and atrophies. Mottled depigmentation may also be seen, especially over the shins. Enlarged inguinal and femoral nodules are common in African patients and, in extreme cases, may lead to local dependent edema ("hanging groin").

The burden [2]

Onchocerciasis remains a serious public health problem in much of tropical Africa, affecting 17.6 million people. The most severe consequence of the disease is blindness, the rate of which is variable and might afflict over 5% of the adult population in the most affected communities (in the West African Savanna, for example). This imposes an overwhelming burden that threatens the economic survival of the villages. The infection is probably largely responsible for epilepsy and growth retardation.

The importance of skin disease [3]

While the disastrous effects of ocular damage and blindness caused by onchocerciasis have always been given high priority as a public health problem, skin disease has received scant attention. Large multi-country studies have recently shown that onchocercal skin disease imposes a grave burden and that its symptoms have significant personal and psychosocial effects, not only on the affected individuals but also on their families and communities. The associated symptoms make it difficult for affected persons to concentrate, work and interact socially. Onchocercal skin lesions are an important cause of stigma and seriously affect the individual's self-esteem. For those affected, the most serious consequence of onchocercal skin disease is itching, which is often very severe and the cause of sleeplessness, fatigue and weakness. Troublesome

itching also leads to scratching, often with stones, twigs or knives, and results in bleeding wounds, sores and pain in the affected parts of the body.

Onchocerciasis in Israel

Over 80,000 Ethiopian Jews immigrated to Israel between 1985 and 2001. Although the vast majority of them come from villages in the Gondar province in western Ethiopia where onchocerciasis is not very prevalent, we have recently absorbed immigrants from the Kuwara highland in northwest Ethiopia where onchocerciasis is highly endemic, affecting 50% of children above 10 years of age and 90% of adults older than 30 [4]. It follows, therefore, that many cases of onchocerciasis should be expected among recent immigrants from these areas.

Enk et al., the authors of an article appearing in this issue of the journal [5], did a superb job in detecting active cases of onchocerciasis among immigrants from endemic areas of north-western Ethiopia. These cases had not been recognized in the general health examinations that the individuals underwent upon their arrival in Israel. Enk and co-workers not only draw our attention to the existence of this infection in Israel, but also give us an excellent and comprehensive set of guidelines for dealing with these cases by providing details on the various symptoms, diagnostic tools and correct treatment. This work makes an important contribution to our knowledge of the condition and to its treatment.

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Correspondence: Dr. R. Wolf, Dermatology Unit, Kaplan Medical Center, Rehovot 76100, Israel.

Fax: (972-9) 956-0978

email: wolf_r@netvision.net.il