

NON-OCULAR ONCHOCERCIASIS MANIFESTATIONS IN SIERRA LEONE. A NEW LOOK

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ABSTRACT

Objective: To describe the main clinical and epidemiological characteristics of non-ocular onchocerciasis manifestations in Sierra Leone.

Methods: One hundred and sixteen civilian patients from different areas in Sierra Leon were seen at the Jordanian Field Hospital in the period between August to the beginning of December 2000. All patients were diagnosed with onchocerciasis by at least one hip skin snip test.

Results: The frequency of the disease was generally low (13%) and 67% of the patients were in their fourth and fifth decades. The commonest presentation was pruritis, followed by pigmentary changes, either acute or with chronic papular changes. Skin nodules were documented in 15 patients, (13%), and lizard skin was seen in 8 patients (6%). However, leopard skin (three cases), scrotal and lymph node enlargement (two cases) were the least frequent manifestations.

Conclusion: Onchocerciasis has been found to be one of the major health problems worldwide, especially in Africa. Ivermectin administration and the onchocerciasis control program are effective in reducing disease incidence.

Key words: Dermatological onchocerciasis, Lizard skin, Leopard skin, Sierra Leon, West Africa.

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Introduction

Onchocerciasis is a parasitic disease caused by *Onchocerca volvulus*, is considered to be one of the leading causes of blindness in the developing world. The Savanna zones of west and central Africa are considered to be the classical homes of the disease. This disease has extended to Yemen, the southern part of Saudi Arabia and Central America⁽¹⁾.

About 86 million people around the world now stand the risk of acquiring the nematode with 18 million people already infected. While 99% of identified cases occur in tropical Africa, the rest of scattered foci exist in Latin America. The disease is transmitted by the small simuliid black fly, which is an obligate intermediate host of *Onchocerca volvulus*. These flies breed in the fast flowing rivers, and cause the disease commonly known as river blindness. Flies are sometimes found up to 4 km

away from the river⁽²⁾. Adult females release approximately 1000 microfilaria per day over 9 to 14 years. The cycle continues after the intake of blood meal by black flies⁽³⁾.

Onchocerciasis clinical manifestations differ from patient to patient, and from one area to another. Clinically, onchocerciasis takes the following three forms: 1. Eye Disease. 2. Subcutaneous nodules and 3. Dermatitis⁽⁴⁾.

Less common are weight loss and lymphatic involvement including lymph nodes enlargement. The skin manifestations of the disease include:

1. Rash, which is maculopapular usually associated with itching and scratching marks.
2. Leopard skin, which is a patchy depigmentation and usually presents over the skin.
3. Lizard skin, which is atrophy and scaling of the

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skin, is commonly present on the buttocks and thighs. It involves the whole skin and depicts the appearance of early aging.

4. Lymphoedema, which makes the skin thick, especially in the groin and leads to “ hanging groin”⁽⁵⁾.

Methods

During the United Nations Mission in Sierra Leone, a Jordanian field hospital was prepared to receive about 60 civilian patients daily. During the period from the first of August to the the beginning of December 2000, any patient with dermatological problem was investigated for onchocerciasis both clinically and parasitologically. “An onchocercal patient” is defined to be any patient with any skin lesion with or without visual problem with positive skin snip test for onchocercal microfilaria regardless of the microfilarial load per mg of skin snip”.

Skin snip test was done by raising the skin apart with the head of a needle and cutting a small fragment with a blade, the amount of the skin snip is usually 1 mg. This is usually sufficient to give a good concentration for microfilaria, by adding a drop of normal saline and checking the slide under a microscope at low power; the microfilariae could be seen emerging from the tissue. Two hip skin snips were done for every patient and read two times; instantly and after half an hour. The study was conducted over the 4-month period.

Results

The patients were evaluated through a complete clinical examination, as well as systemic diseases and other extra-dermatological pathologies. Scabies, and cutaneous leishmaniasis were neglected. Though 892 patients were seen with skin problems, only 116 of them were diagnosed as Onchocercal patients, with the following breakdown in gender: 60 of them were females (52%) and 56 were males (48%).

Sixty seven percent of patients were in the 30-49 years age group (Fig. 1), seventy four patients, (64%) had at least two types of Onchocercal skin lesions.

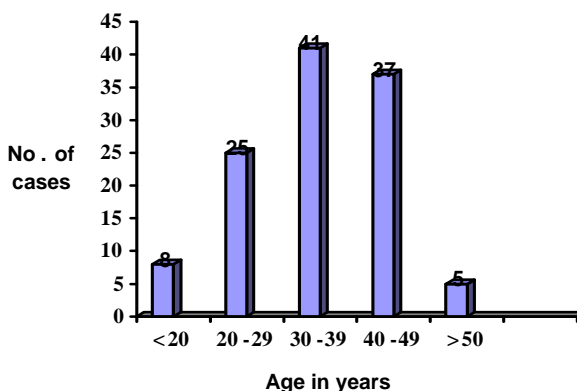


Fig. 1. Age distribution in decades of 116 patients with onchocerciasis.

Generally, the frequency of the disease among the patients seen at the hospital was low (13%), with pruritis dominating all other features, in 86 patients (74%) as shown in Fig. 2. Pigmentary changes in the form of acute or chronic popular dermatitis, were present in 50 patients (43%), (Fig. 3). Skin nodules (Fig. 4) were seen in 15 patients, with the majority of them in the iliac crest (Fig. 5)

Depigmentation (Leopard skin) and skin atrophy (Lizard skin) were seen only in 3 and 8 patients (Fig. 6 and 7, respectively).

Scrotal and lymph node enlargement were the least frequent and occurred in 2 cases.

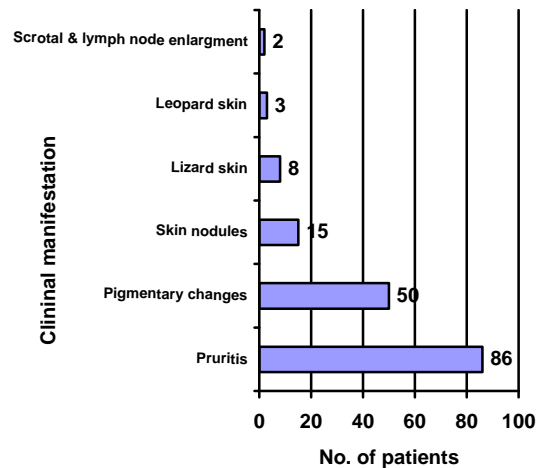


Fig. 2. Dermatological Presentation of 116 patients (74 patients have 2 or more pathologies).



Fig. 3. Dermatitis in a Lebanese patient with onchocerciasis.



Fig. 4. Skin nodules.



Fig. 6. Leopard skin, more prominent at the left chin.

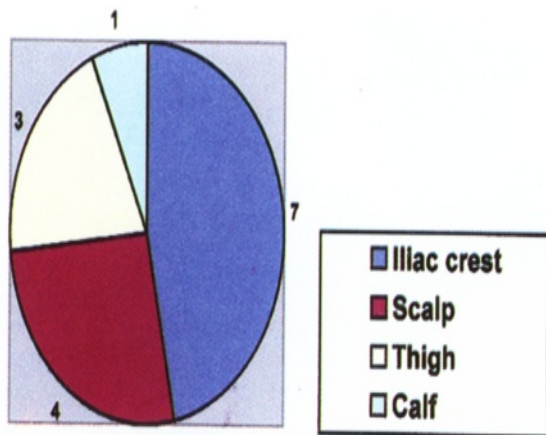


Fig. 5. The distribution of skin nodules.



Fig. 7. Lizard skin, more prominent at the forearm.

Discussion

This is a study of 116 patients diagnosed as having dermatological Onchocerciasis at three districts in Sierra Leone: Bo, Kenema and Porto Loko. Generally, the course of the disease has changed due to the following two important reasons: The implementation of Onchocerciasis control program (OCP) in West Africa for the past twenty years⁽⁶⁾ and the introduction and administration of Ivermectin drug (Mectizan), which is a well-tolerated, and highly effective microfilaricidal drug⁽⁷⁾.

As previously mentioned, diagnosis of Onchocerciasis in this study, depended on positive skin snip test in symptomatic patients. There were differences in the prevalence of microfilarial diseases in different parts of Africa. The prevalence rate of dermatological Onchocerciasis was low (13%), compared to other parts of Africa: 23%, 34.4%, >30%, 48%, 60.5%⁽⁸⁻¹²⁾ in: Ethiopia, Burundi, Ghana, Uganda, and Ivory Coast, respectively. The prevalence was almost the same in the two sexes but increased with age. The sharp decline in the sixth decade and above can be partly explained by the lower life expectancy in that part of the world.

Similar to other studies⁽¹⁰⁻¹²⁾, the most common manifestation of the disease among patients was itching which was closely followed by pigmentary dermatitis (acute and chronic papular lesions). Skin nodules represented 13% of cases which was less than or equal to half of the documented cases in Burundi and Taraba river valley^(9,13), Nigeria. Clinical manifestations which are usually associated with high microfilarial density and prolonged exposure such as lizard and leopard skin are now rare. This positive change augments the efficacy of Ivermectin donation program⁽¹⁴⁾.

Lastly, Sierra Leone, which was considered to be hyperendemic area^(15,16) can now be regarded as meso-hypoendemic, mostly due to the result of Ivermectin administration and the effort of the onchocerciasis control program (OCP). In order to confirm these facts, further studies are needed in other African countries where the OCP and Ivermectin donation program are implemented.

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