

Zeitschrift: Acta Tropica
Herausgeber: Schweizerisches Tropeninstitut (Basel)
Band: 34 (1977)
Heft: 3

Artikel: Microfilarial polyarthritis in a massive Loa loa infestation : a case report
Autor: Bouvet, J.P. / Thérizol, Madeleine / Auquier, L.
DOI: <https://doi.org/10.5169/seals-312267>

Nutzungsbedingungen

Die ETH-Bibliothek ist die Anbieterin der digitalisierten Zeitschriften auf E-Periodica. Sie besitzt keine Urheberrechte an den Zeitschriften und ist nicht verantwortlich für deren Inhalte. Die Rechte liegen in der Regel bei den Herausgebern beziehungsweise den externen Rechteinhabern. Das Veröffentlichen von Bildern in Print- und Online-Publikationen sowie auf Social Media-Kanälen oder Webseiten ist nur mit vorheriger Genehmigung der Rechteinhaber erlaubt. [Mehr erfahren](#)

Conditions d'utilisation

L'ETH Library est le fournisseur des revues numérisées. Elle ne détient aucun droit d'auteur sur les revues et n'est pas responsable de leur contenu. En règle générale, les droits sont détenus par les éditeurs ou les détenteurs de droits externes. La reproduction d'images dans des publications imprimées ou en ligne ainsi que sur des canaux de médias sociaux ou des sites web n'est autorisée qu'avec l'accord préalable des détenteurs des droits. [En savoir plus](#)

Terms of use

The ETH Library is the provider of the digitised journals. It does not own any copyrights to the journals and is not responsible for their content. The rights usually lie with the publishers or the external rights holders. Publishing images in print and online publications, as well as on social media channels or websites, is only permitted with the prior consent of the rights holders. [Find out more](#)

Download PDF: 09.12.2025

ETH-Bibliothek Zürich, E-Periodica, <https://www.e-periodica.ch>

Microfilarial polyarthritis in a massive *Loa loa* infestation

A case report

J. P. BOUVET¹, MADELEINE THÉRIZOL, L. AUQUIER

Summary

A Cameroonian affected with massive *Loa loa* infection developed febrile arthritis with involvement of both knees and the left ankle. Although the patient was first seen by us after one month of treatment with Indomethacin, at this time the joints were still inflamed and microfilariae of *Loa loa* were found in the synovial fluid. No other etiological mechanism was identified. Following the articular puncture and treatment with Ketoprofen, the arthritis subsided within a week. This is the first case to be studied in which arthritis during loasis has been explicitly documented by the presence of intra-articular microfilariae.

The filarial arthritides are not uncommon. They are mainly caused by Guinea worm and *Wuchereria bancrofti*, while arthritis due to *Onchocerca volvulus* appears to be less frequent. As for the *Loa loa*, this parasite is not normally thought to produce arthritis although acute periarticular inflammation often occurs in Calabar edema. Kerckhove [11], and Michotte and Schevrel [12] gave a brief description of loasis rheumatism although they did not explain the mechanism involved. In the present case, polyarthritis was found to be related to the presence of intra-articular microfilariae.

Case report

Mr. D., a 28-year-old Cameroonian student, was first examined by us in January 1975, for pain in his knees and the left ankle.

His past history included symptoms of parasitic infections: at age 22 he had been hospitalized for *Anguillula* and *Necator* infections, since 1970 he complained of intermittent pruritis, and in 1974 he mentioned the migration of a worm under the conjunctiva of his right eye.

¹ Recipient of the Fonds d'études du Corps médical hospitalier

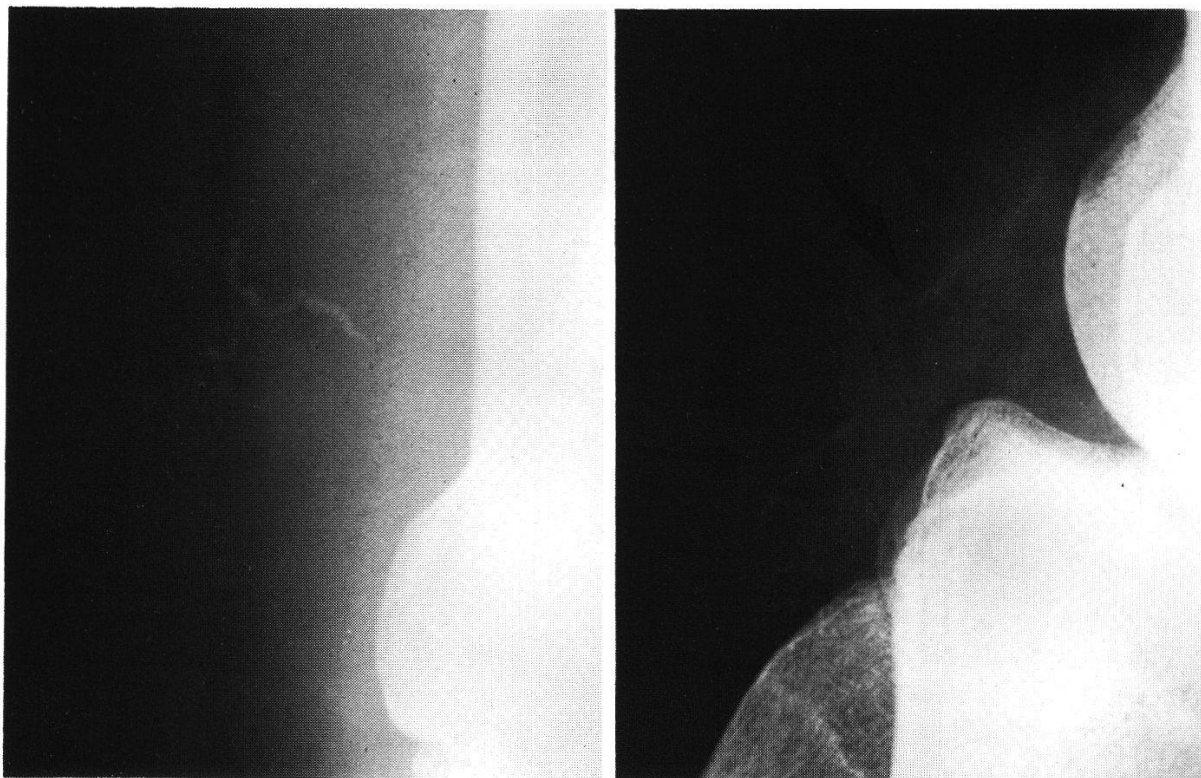


Fig. 1. – a) Invasion of peripheral blood by larvae ($\times 70$). – b) *Microfilaria* in synovial fluid ($\times 270$).

The left knee pain first occurred on December 15, 1974. The joint was then inflamed and the body temperature was 39°C . On December 18, his right knee and left ankle also became involved. At this time, the patient was treated with Indomethacin at 100 mg daily. The fever disappeared within one week, and the joint swelling decreased somewhat during the next three weeks.

January 20, when the patient was first seen by us, pain was moderate, weight loss was at 6 kg, but his general condition was good. The left knee was warm and swollen, had a slight limitation of flexion-extension, and contained fluid. The left quadriceps muscle was atrophied, while the left ankle was slightly stiff and warm.

Laboratory data: The ESR was 10 mm (1st hour), whereas it had been 30 mm two weeks before. The blood count was normal, with eosinophils at 4%. The presence of abnormal haemoglobin (Hb S) was noted. There was no rheumatoid factor, nor increase of antistreptolysin O. The histocompatibility antigen HLA B27 was not present. Cyto-bacteriologic examination of the urethra did not show intracellular inclusions, nor gonococcal infection. Blood samples taken at 3 P.M. showed massive *Loa loa* infection (400 larvae/cm^3) (Fig. 1b). The indirect immunofluorescence assay with filarial antigen was positive in the serum at a dilution of 1/200. The synovial fluid obtained from the left knee was not abundant (1.5 cm^3), yellowish, turbid, viscous and sterile; it contained 2400 cells/mm^3 : 48% PMN, 52% lymphocytes, 0% eosinophils. Moreover, microscopical examination showed intra-articular *Loa loa* microfilariae (Fig. 1).

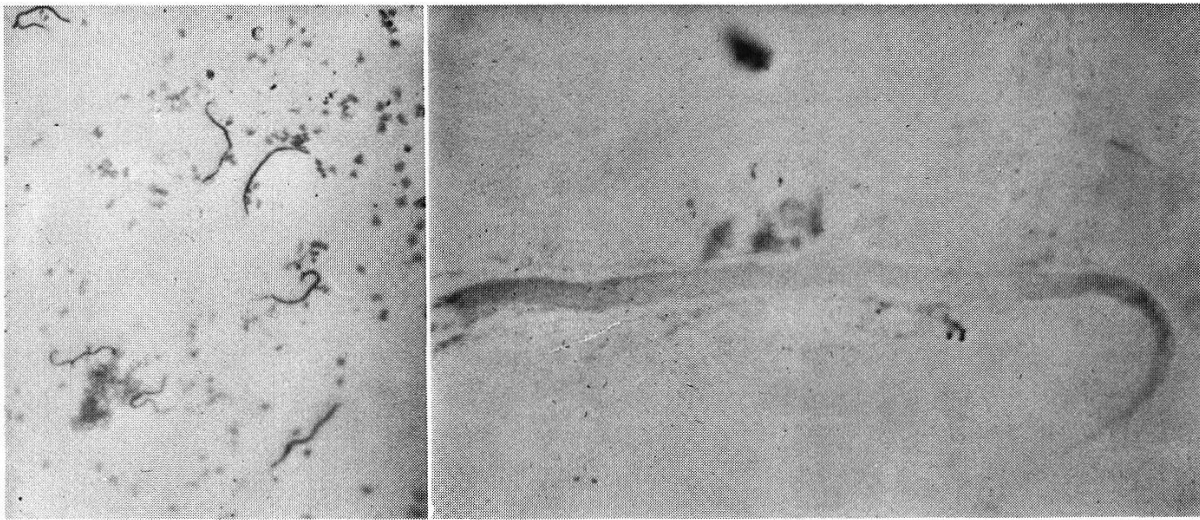


Fig. 2. Filarial calcifications in soft tissues: a) left ankle, b) left knee.

X-rays showed many worm calcifications which resembled adult *Loa loa*, spread throughout the soft tissues, mainly around the joints (Fig. 2).

As the patient refused an immediate hospitalisation it was impossible to begin antifilarial treatment, and he was treated with an anti-inflammatory drug, Ketoprofen at 200 mg daily. January 28, one week after the articular puncture had been performed, the pains had completely disappeared, examination was normal and the treatment was discontinued.

In June 1975, the patient was hospitalized for filarial eradication with Diethylcarbamazine. Tolerance was excellent, and the joints remained normal.

Discussion

Arthritis is known to occur with Guinea worm, *Wuchereria bancrofti* and *Onchocerca* filariasis. Arthritis due to Guinea worm is the most frequent and was first described by Béranger-Féraud (1860), and more recently by Huard [8]; it is usually a monoarthritis which affects mainly the knee. The arthritis is due to presence of an adult worm in the joint or in the periarticular region. The worm releases microfilariae into the joint, and consequently induces an inflammatory reaction. A bacterial infection may occur via a skin fistula but usually the synovial fluid is aseptic and contains only worms and larvae [7, 10, 14, 15, 16]. The treatment requires filarial removal by surgery or by arthroscopy [6].

Wuchereria bancrofti induces a polyarthritis which may simulate rheumatic fever [2, 9, 13]. It is common in endemic countries and is also observed in foreign patients in Europe where Coste et al. [3] called it "filarial rheumatism". The mechanism of these attacks seems to be associated with an inflammatory block in the lymph ducts. Neither worms nor larvae are found in the joints. The synovial fluid is chylous [4].

First reported by Advier-Déjou [1], arthritis due to *Onchocerca* is unusual. Involvement is monoarticular. There is acute onset with fever and local inflammation. The fever quickly disappears but local symptoms remain for several weeks. The latter also disappear following removal of synovial fluid [5]. Microfilariae are found in the synovial fluid.

There are two reports on *Loa loa* arthritis [11, 12], in which, among 4 patients, only in two was a true relation between arthritis and filariasis probable. But in no case was it proven by articular puncture.

In the present case it was established that the synovial fluid contained microfilariae, and that therefore the arthritis was due to the massive *Loa loa* infection. The joint cellular reaction did not contain eosinophils and was not of allergic type; it contained PMN and lymphocytes and seemed to be of "granulomatous" type. As observed in cases of arthritis due to *O. volvulus*, it is possible that the removal of the synovial fluid might have shortened the evolution of this arthritis. The simultaneous involvement of three joints might be due to massive infection by adult worms which release larvae in the blood and sometimes in joints. To conclude, in the present case, one month after arthritic onset, X-rays showed many worms around the joints, the blood contained a very high number of microfilariae, and most significantly, the synovial fluid was found to contain several microfilariae.

- 1 Advier-Déjou L.: Arthrite aiguë du genou avec présence d'embryons d'*Onchocerca volvulus* dans le liquide articulaire. Bull. Soc. Path. exot. 31, 727-730 (1938).
- 2 Alhadeff R.: Clinical aspects of filariasis. J. trop. Med. Hyg. 58, 173-179 (1955).
- 3 Coste F., Cayla J., Molinard R.: Rhumatisme filarien. Rev. Rhum. 25, 728-732 (1958).
- 4 Das G. C., Sens B.: Chylous arthritis. Brit. med. J. 1968/II, 27-29.
- 5 Déjou L.: Les localisations chirurgicales des filarioses africaines: arthrites et suppurations des parties molles. Méd. trop. 1, 15-35 (1941).
- 6 Dorfmann H., Sèze de S.: Monoarthrites filariennes. A propos d'un cas diagnostiqué par arthroscopie. Nouv. Presse méd. 1, 1013-1016 (1972).
- 7 Gandhi N. J.: Unusual manifestation of dracunculosis. Brit. med. J. 1962/I, 1206.
- 8 Huard P.: Quelques remarques sur les arthrites par ver de Guinée. Bull. Soc. Path. exot. 31, 722-725 (1938).
- 9 Ismail M. M., Nagaratnam N.: Arthritis possibly due to filariasis. Trans. roy. Soc. trop. Med. Hyg. 67, 405-409 (1973).
- 10 Johnson M. F.: Guinea worm arthritis of knee joint. Brit. med. J. 1968/I, 314.
- 11 Kerckhove van H.: Filariosis rheuma. J. belge Méd. phys. Rhum. 14, 213-220 (1960).
- 12 Michotte L. J., Schevrel de J. A.: Filariose *Loa loa* et facteur rhumatoïde. J. belge Méd. phys. Rhum. 17, 241-243 (1962).
- 13 Nagaratnam N., Ismail M. M.: Criteria for diagnosing rheumatic fever in Ceylon. Trans. roy. Soc. trop. Med. Hyg. 67, 803-807 (1973).
- 14 Reddy C. R., Sivaramappa M.: Guinea worm arthritis of knee joint. Brit. med. J. 1968/I, 155-156.
- 15 Sivaramappa M., Reddy C. R., Devy C. S., Reddy A. C., Reddy P. K., Murphy D. P.: Acute Guinea worm synovitis of the knee joint. J. Bone Jt Surg. 51A, 1324-1330 (1969).
- 16 Verhaeghe A., Lesage R., Descambre B., Zyberberg G., Catanzariti L.: Les arthrites aseptiques au cours des filarioses. Rev. Rhum. 35, 514-520 (1968).