

*Case report*

# Leg edema and painful gait in a Western African due to dracunculiasis: A case report

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## Abstract

We present the case of a 28 year old man from Mali who came to consultation for "lower limb edema and painful gait". The diagnosis of dracunculiasis was established by the suggestive symptomatology and the notion of a trip back to his native country a year earlier. It was confirmed by the outing of the worm.

**Keywords:** Leg edema; Painful gait; Dracunculiasis; Mali

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## CASE REPORT

Mr. K. M. is a 28 year old man from Mali, father of 4 children, city trash collector who comes to consultation for: "Lower limb edema and painful gait". In his past medical history, he went back to his native country a year ago for his annual summer holiday. He has been living in France for 5 years. Medically and surgically, the patient's record is unremarkable. As far as his habits are concerned, being a Muslim Mr. K. M. does not drink any alcohol but he smokes very lightly (about 3 packs per year). In his family history, his father died from an unknown condition but his mother, sisters and brothers are all alive and well. The patient lives in a state-sponsored housing district in Paris.

The history of his disease starts a week prior to consultation with an edema first around his left internal malleolus then on the next day, at his right calf level. Progressively, his two legs became painful and he experienced pain when walking, becoming

unable to move normally. About 5 days later, he noticed phlyctenular lumps under his left internal malleolus and in the lower third of his right calf. Both ruptured spontaneously on the same day and a pinkish fluid started oozing. The day after the rupture, two whitish threads appeared on these sites.

The clinical exam reveals two edematous legs, which are tender on palpation. The edema is non-pitting and the surrounding skin warm. Local lymph nodes are not enlarged. The patient is afebrile and the rest of his physical exam is entirely normal.

## DISCUSSION

Dracunculiasis is also called dracontiasis or Guinea worm infection<sup>[1]</sup>. It is caused by a nematode: *Dracunculus medinensis*. Only the adult female induces symptoms. She measures 35 to 100 centimeters<sup>[2]</sup>. Dracunculiasis is endemic between the tropic of cancer and the equator in Africa, India and Pakistan. Contamination occurs by ingesting cyclops (microscopic fresh water shell fish) infested with *D. medinensis microfilariae*<sup>[3]</sup>.

The incubation period is about 12 months<sup>[4]</sup>. The diagnosis is primarily clinical and based upon the notion of a prior stay in an endemic area within

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the time frame of the period of incubation. The most frequent early symptoms are very suggestive and consist of leg edema and pain. The diagnosis becomes obvious with the outing of the adult worm(s)<sup>[5]</sup>. The clinical diagnosis can be confirmed biologically by putting the female adult of *D. medinensis* in a watch glass filled with water. Upon contact with water microfilariae are released. They are characteristically striated<sup>[6]</sup>. With malaria, in Europe, dracunculiasis is a pathology linked to annual holidays particularly among immigrant workers from Western Africa. In the vast majority of cases (75%), the adult worm(s) exit(s) at the lower limb level. About 50% of patients host more than 1 worm and up to 20. Complications are rare and involve: (a) Arthritis provoked as a reaction to the passage of a parasite in a joint vicinity, (b) Purulent but non-bacterial arthritis occurring when a worm invades a joint and (c) Erratic worm migrations all over the body, including the spinal cord (exceptionally). It is worth noting that asymptomatic parasitic cul de sacs are frequent in the sub-cutaneous tissue where pathognomonic calcified stigma of the worm can be found. Specific pharmaceutical treatment of dracunculiasis does not exist. Therefore, care is based upon the indigenous method which is made of progressively rolling the worm on a stick at the rate of a few centimeters per day, carefully avoiding breaking it. Sometimes, it is necessary to make an incision with a scalpel to allow the worm to exit and drain the edema<sup>[7]</sup>. In case of secondary bacterial infection, an antibiotic is prescribed. Drugs with anti-inflammatory and analgesic properties are given for the pain.

Finally, it is important to update the tetanus vaccination, as the exit wound can become a port of entry to *Clostridium tetani*. Prophylaxis in endemic areas hinges upon: (a) Individually: Filtering or boiling drinking water and (b) Collectively: Building tubular wells with a circular step or eradicating cyclops chemically with temephos, for example<sup>[8-11]</sup>.

## REFERENCES

- 1 Mosby's medical dictionary. New York: Mosby Pub. 1994.
- 2 **Gentilini M.** Médecine Tropicale, Paris: Flammarion Pub, 1993. 184-188.
- 3 **Hopkins DR.** Perspectives from the dracunculiasis eradication program. *Bull. WHO.* 1998;7 (suppl. 2):38.
- 4 **Bourée P.** Aide-mémoire de parasitologie et de pathologie tropicale, Paris: SmithKline Beecham Pub. 1999. 62-64.
- 5 **Tierney LM, McPhee SJ, Papadakis MA.** Current medical diagnosis and treatment, New York: McGraw Hill Pub. 2001. 1465-1466.
- 6 **Carne B, Gentilini M.** La dracunculose ou filariose de Medine. *Encycl. Med. Chir.* 1982; 8112(A20):4.
- 7 **Rhode JE, Sharma BL, Patton H, Deggan C, Sherry JM.** Surgical extraction of Guinea worm; Disability reduction and contribution to disease control. *Am J Trop Med Hyg.* 1993; 48:71.
- 8 **Muller R.** Laboratory experiments on the control of cyclops transmitting Guinea worm. *Bull Org Mond Sante.* 1970;42: 563.
- 9 **OMS/WHO.** Journée d'études sur les possibilités de lutte contre la dracunculose. *Releve Epidem Hebd.* 1983; 58: 249.
- 10 **OMS/WHO.** Critères de certification de l'élimination de la dracunculose, Geneva. OMS. 1990;21.
- 11 **Anon.** Dracunculose; Bilan de la surveillance mondiale. 1990. *Releve Epidem Hebd.* 1991;66(31):225.