

## Mansonella Streptocerca: Another Filarial Worm in the Skin in Western Uganda

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Onchocerciasis, or river blindness, is a disease of public health importance in Uganda. The standard diagnostic procedure for rapid assessment in endemic communities is nodule palpation. The nodules are groups of adult worms in the human host. These nodules can be found on the head, thorax, pelvis, arms and knees.



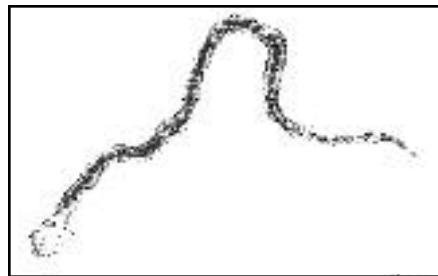
*Mansonella streptocerca*

*Drawing: Caroline McGavin*

In Uganda, more than 80% of the nodules are found in the pelvic region. Dermatitis and ocular lesions are commonly associated with the infection and in long standing cases there is blindness, hence the name river blindness for those who are close to rivers in which the vectors are breeding. Skin biopsy which reveals microfilariae is a more specific and sensitive procedure. Since the method carries the risk of transmission of hepatitis and HIV, if sterile procedures are not strictly observed, it is not used for rapid assessment; but is often used for individual diagnosis in laboratories in Uganda.

In Uganda, any microfilariae found in the skin are considered to be *Onchocerca volvulus* since the other filarial worm in the skin, *Mansonella streptocerca*, has so far only been reported from countries in West and Central Africa. Surveys have been conducted in Bundibugyo district in 1994 and 1995. For the first time, *Mansonella streptocerca* was found to be widely distributed in communities in Western Uganda along the Uganda-Zaire border. It was also found in the interior, in villages like Nyahuka and Ntandi, in Bundibugyo district, at altitudes lower than 1000 metres. More than 300 individuals were included in the study and a prevalence of about 60%, ranging from 30–80%,

was found. This means that Ugandan laboratories using skin snip for diagnosis of filarial infection have to differentiate between *Onchocerca volvulus* and *Mansonella streptocerca* microfilariae, since the latter may occur in other parts of Uganda. *Mansonella streptocerca* microfilariae are shorter and thinner than those of *Onchocerca volvulus*. The length is two-thirds of the latter. The posterior end of *Mansonella streptocerca* is bent like a shepherd's crook. An experienced laboratory worker can differentiate them without staining.



*Onchocerca volvulus*

*Drawing: Caroline McGavin*

Fortunately, on clinical diagnosis there is less likelihood of mixing the two worms. Unlike *Onchocerca volvulus* which forms nodules of adult worms, *Mansonella streptocerca* does not form similar nodules. The *Mansonella streptocerca* microfilariae carriers examined in Bundibugyo had little or no skin disease, and no ocular involvement. Anti-filarial mass treatment appears not to be indicated. This is an accordance with published opinions.

### Effects of Ivermectin on *Mansonella Streptocerca*

It has been reported that DEC is effective against the microfilariae and adult worms of *Mansonella streptocerca*, while nothing is known about the efficacy of ivermectin. It was observed in Bundibugyo that a good number of patients with *Mansonella streptocerca* have skin reactions as observed in patients with *Onchocerca volvulus* treated with the same drug. However, the efficacy of this drug on *Mansonella streptocerca* needs further studies, though a good number of patients, who were positive before treatment, showed a lower count of



microfilariae or even a zero count after treatment with ivermectin.

### Conclusion

It is important that onchocerciasis workers in Uganda are aware of *Mansonella streptocerca* which may be prevalent in their areas. So far mass treatment with ivermectin should not be used in areas with *Mansonella streptocerca* only, since people appear to be suffering more from side effects than untreated infections. However, individual patients seen in health centres who appear to be suffering from *Mansonella streptocerca* may be treated.

### Comment

*Mansonella streptocerca* is a filarial worm which is transmitted to man by biting midges of the genus *Culicoides*. It usually causes no symptoms, but may cause dermatitis, usually affecting the thorax and shoulders. Treatment with diethylcarbamazine (DEC) can lead to an intensely pruritic reaction, as it can with onchocerciasis.

The filarial infection was previously thought to be endemic only in West and Central Africa. The paper by J T Bamuhiiga is the first to report it in East Africa. It is important chiefly because microfilariae of *Mansonella streptocerca* may be mis-identified as those of *Onchocerca volvulus* when found in skin snips. As the figures show, however, the two can be easily distinguished by the characteristic bent tail of *Mansonella streptocerca*.

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