Body Cavity Filariasis

Filariasis is a parasitic disease caused by thread-like filarial nematodes (roundworms) in the family Filarioidea (also known as 'filariae'). Of the hundreds of described filarial parasites, only 8 species cause natural infections in humans (see separate articles Lymphatic Filariasis and Cutaneous Filariasis). Body cavity filariasis is caused by the worms Mansonella perstans and Mansonella ozzardi.

Life cycles
- Infective larvae are transmitted by infected arthropods during a blood meal. The larvae migrate to the appropriate site of the host's body, where they develop into microfilariae-producing adults.
- The adult worms of M. ozzardi live in the abdominal cavity of the human host, living within the mesenteries, peritoneum and in the subcutaneous tissue. The adult worm can live for several years.
- M. perstans adult worms live in body cavities, most often the peritoneal cavity or pleural cavity and, less frequently, in the pericardium.
- The female worms produce microfilariae which circulate in the blood. The microfilariae infect biting arthropods (midges for M. perstans and both midges and blackflies for M. ozzardi).
- Inside the arthropod, the microfilariae develop within 1 to 2 weeks into infective filariform (third-stage) larvae. During a subsequent blood meal by the insect, the larvae infect the vertebrate host.
- The larvae then migrate to the appropriate site of the host's body, where they develop into adults.

Epidemiology
- There are very few prevalence data because mansonellosis is often asymptomatic.
- M. perstans occurs in both Africa and South America.
- M. ozzardi occurs in Central America and South America.
- Mansonellosis is particularly common in Central Africa and around the Amazon basin.

Presentation
- Mansonellosis is most often asymptomatic or a benign self-limiting illness.
- Infections by M. perstans may be associated with angioedema, pruritus, fever, headaches, arthralgia, and neurological manifestations.
- M. ozzardi can cause symptoms that include arthralgias, headaches, fever, pulmonary symptoms, lymphadenopathy, hepatomegaly and pruritus.

Investigations
- Identification of microfilariae by microscopic examination is the most practical diagnostic procedure.
- Examination of blood samples will allow identification of microfilariae of M. perstans and M. ozzardi. A thick smear, stained with Giemsa or haematoxylin and eosin is often used.
- Antigen detection using an immunoassay for circulating filarial antigens is useful because microfilaremia can be low and variable.
- Antibody detection is of limited value. Substantial antigenic cross-reactivity exists between filaria and other helminths, and a positive serological test does not distinguish between past and current infection.

Management
- Albendazole or mebendazole are effective for the treatment of M. perstans.
- The drug of choice for treating M. ozzardi is a single dose of ivermectin.

Prevention
- Prevention of insect bites by wearing long-sleeved shirts, not wearing short trousers and the use of insect repellants.
- Widespread application of insecticides to specific breeding sites has been used.
Further reading & references

- Parasites A-Z, Centers for Disease Control and Prevention

1. Wayanganka S et al; Filariasis, Medscape, May 2013
2. Wayangankan S et al; Filariasis, eMedicine, Nov 2009
3. Lymphatic Filariasis, DPDx, Centers for Disease Control and Prevention

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