

Massive peripheral microfilariaemia in a case of human subcutaneous dirofilariasis

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Dirofilariasis is a human parasitic disease caused by the nematode of the genus *Dirofilaria*. *Dirofilaria repens* and *Dirofilaria immitis* are the most common of these species in Europe. Dirofilariasis is a vector-borne disease transmitted during the female mosquito bite. Dogs, cats and other carnivores comprise the reservoir for those nematodes, and humans are the non-specific hosts. Only a few cases worldwide report the presence of microfilariaemia in the peripheral blood in the course of human dirofilariasis.

In August 2014, a 28-year-old man from the Podkarpackie Province was hospitalized with a subcutaneous nodule on his right arm. The patient had never traveled outside Poland and lived near the border with Ukraine. After the surgical removal of the lesion, histopathological analysis was performed. Knott's concentration method was used for the detection of suspected peripheral microfilariaemia. PCR examination of the microfilariae was also performed.

After the histopathological examination of the nodule, *Dirofilaria repens* infection was suspected. The cross-section showed a gravid female nematode with a double uterus filled with microfilariae. Typical morphological features were observed: longitudinal ridges on the multilayered cuticle, long muscle cells and the lateral cords. The analysis by Knott's concentration method showed the presence of intensive peripheral microfilariaemia by using Giemsa stained blood films. The microfilariae were 360±10μm in length and 8±1.5μm in width with a rounded cephalic end and a filiform tail, often ending in an umbrella-handle shape. The microfilariae in the peripheral blood demonstrated periodicity. PCR examination of microfilariae confirmed *Dirofilaria repens* infection.

Microfilariaemia can be found in the peripheral blood in the course of human dirofilariasis.

Humans are not the dead-end hosts for *Dirofilaria* nematodes and in some specific cases, they can act as an occasional reservoir. The Knott's concentration method should be performed during the seasonal activity of the vectors in certain geographic areas.