

Subconjunctival Infection with *Dirofilaria repens*

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Dirofilariasis is a parasitic disease of domestic and wild animals that occasionally appears in humans. Many kinds of *Dirofilariae* can be isolated from humans, including species of *Dirofilaria*, *Brugia*, *Onchocerca*, *Dipetalonema*, *Loainia*, and *Meningonema*. Worms have been found in many tissues, such as subcutaneous tissue, heart, lung, lymphatics, eyes, and the central nervous system. Microfilaria is accidentally transmitted to humans by *Culex* and *Aedes* mosquitoes. Ophthalmic infection with *Dirofilaria* is documented all over the world, including North America, Europe, Australia, Africa, the Middle East, and Asia.

The involvement of the eye may be periorbital, subconjunctival or intraocular. In this report we describe a case of subconjunctival infection with *Dirofilaria repens* that presented with pain and redness in the patient's eye.

Patient Description

A 65 year old man complained of sudden pain and redness in his left eye that had begun 2 days prior to seeking medical help. His ocular medical history included progressive cataract in the right eye. His medical history did not disclose any general health problems. He had emigrated from Russia 6 years earlier. He reported working regularly in his garden and had no close association with domestic animals. Routine laboratory tests were within normal limits.

On ocular examination, best corrected visual acuity was 1 m finger count in the right eye and 20/40 in the left eye. Slit-lamp examination revealed a moving subconjunctival nematode located inferotemporally in his left eye. Conjunctival infection was observed in the left eye over the nematode. Progressive cataract

was found in the right eye. Intraocular pressure was normal in both eyes and fundus examination was normal in the right eye. Lattice degeneration was found in the peripheral retina of the left eye.

Surgical removal of the nematode was performed under local anesthesia in the operating room. The conjunctiva was excised over the nematode and it was completely removed with forceps. The nematode was alive, thin, white, cylindrical, and long (9.5 cm length). The worm's largest diameter was 420 µm. The nematode was female with vagina and uterus, and had longitudinal and transverse striation. Its cuticle had longitudinal and circular ridges. The nematode was identified (based on nematode anatomy) as *Dirofilaria repens* or *conjunctivae* by a parasitology expert, and confirmed by the Department of Human Microbiology at Tel Aviv University.

Comment

Dirofilaria immitis and *Dirofilaria* of the subgenus *Nochtiella* (*repens*, *tenuis*, *ursi*, *subdermata*) are parasites of mammals (dogs mainly) occasionally transmitted to humans. Clinical manifestations after infection include nodules in subcutaneous tissues, muscles, and visceral organs.

Cases of *D. repens* infection in the Mediterranean Basin have been reported in Greece, Italy, France, Spain and Israel [1–5]. The first case of *D. repens* was published in 1867 by Angelo Pace in Palermo [1]. In the United States *Dirofilaria tenuis* is the primary infecting agent and is transmitted by raccoons. In Europe, the Middle East, Africa and Asia the primary parasite is *D. repens* and is mainly transmitted by dogs, cats and foxes [3].

Ophthalmic dirofilariasis is transmitted to humans by common insect vectors like

Anopheles, *Culex* and *Aedes* mosquitoes. The first report of human dirofilariasis in Israel was published in 1976 [5]; a female worm was surgically removed from the subconjunctiva of two patients. In one case it was dead and lodged in a subconjunctival abscess, and in the second case the worm was alive and located superficially in a swelling near the inner canthus. Several other reports have been published in Israel, mainly from the north of the country [4].

Most cases with ophthalmic infection present with pain in the eye, redness, sometimes blurred vision, and swelling of eyelids. Symptoms appear mostly weeks or months after infection with microfilaria. Symptoms appear only after the worm enters the subconjunctiva. In this report we describe a case of sudden pain and redness in the left eye. A subconjunctival nematode was found and completely removed surgically.

References

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