Case Report

# Ophtalmic dirofilariasis

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## Abstract

**Background:** To report a case of orbital dirofilariasis from a patient in Abadan city Southwest Iran.
**Case report:** A 54- year- old woman referred to Abadan oil company hospital, Southwest Iran with the symptoms of tearing, irritation, swelling, and itching of the right eye. In ophthalmoscopy, a live worm was observed in sub-conjunctival space. The worm was removed and sent to the laboratory. The worm was white in color with a length of 105 mm. Based on morphological characterization identified as Dirofilaria repns.
**Results:** We found that vitamin D3 suppresses the mRNA expression of TLR2 and TLR4 in patients with type II diabetes. TLR2 and TLR4 expression in the patients exposed to vitamin D3 were significantly decreased in comparison with patients who were not treated with vitamin D3.
**Conclusion:** This is the second report of ocular dirofilarisis from Southwestern tropical region of Iran. Increasing of human dirofilariasis may be attributed to environmental changes with global warming, humidity and increase of mosquito vectors and breeding, agricultural development and change in social conditions, traveling and outdoor living.
**Keywords:** Dirofilariasis, conjunctivitis, Dirofilaria repns. Iran

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## Introduction

Dirofilaria (Nochtiella) repens is a subcutaneous zoonotic parasite of domestic and wild Carnivores, transmitted by zooanthrophilic mosquito vectors including species belong to Anopheles, Culex and Aedes (1, 2). Infection with Dirifilaria repens in man is relatively rare and humans get infection accidentally through blood sucking mosquitoes (3, 4). Since man is a dead-end for the parasite, Dirofilaria repens does not mature and hence most human infections present as isolated subcutaneous nodules. Nodules are usually located in areas exposed to bites by the dipteres, i.e. the face (46% of cases reported in the world) and the periocular and palpebral region (30%) (5). Diagnosis is based mainly on morphological examination of the worm after surgical excision.

## Case Report

A 54 year-old woman referred to Abadan oil company hospital, Southwest Iran with the symptoms of tearing, irritation, swelling, and itching of the right eye. In ophthalmoscopy, a live worm was observed in sub-conjunctival space. The worm was removed and sent to the laboratory. The worm was white in color with a length of 105 mm. Based on morphological characterization identified as Dirofilaria repns (Figure 1). This is the second report of ophthalmic

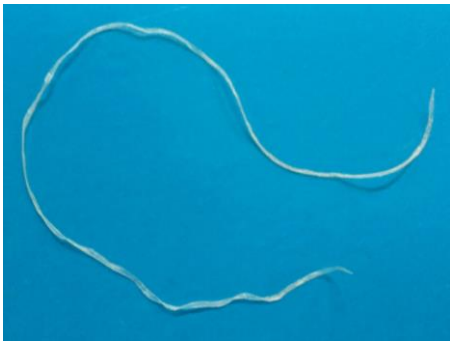

**Figure 1.** *Dirofilaria repens* removed from the subconjunctival space.

dirofilariasis due to Dirofilaria repenas in the province.

## Discussion

Dirofilariasis is a zoonotic infection that may occasionally infect humans. There are about 40 species of Dirofilaria, but only a small number can cause human infection. The most common species in man is Dirofilaria immitis, the common parasite of dogs, Dirofilaria tenuis, a parasite of raccoons, D. repens, aparasite of cats and dogs, and Dirofilaria ursi, which occurs in bears. Humans are accidental and terminal dead-end hosts of Dirofilaria. Microfilariae usually fail to complete maturation, and reproduction occurs rarely. Therefore, pathologic evaluation in humans only demonstrates degenerated immature juvenile worms or adult worms. In response to infection, an inflammatory granulomatous reaction is seen which is associated with infiltration of Neutrophils, Eosinophils, and foreign body giant cells (6). Infection in humans are usually asymptomatic and acute symptoms are noted only when living worms enter the conjunctiva (7, 8). Human dirofilariasis usually presents as the form of pulmonary, subcutaneous, ocular, cardiovascular, or testicular involvement. Ophthalmic dirofilariasis is an uncommon disease, but recently there have been reports from Africa (9), Europe (10- 12), India sub-continent (13) and Asia (14). Ophthalmic involvement (15) may present as periorbital (16), orbital (17, 18) sub conjunctival (19) or intraviterea (20). Human dirofilariasis occur gradually over the last 30 years has significantly increased and ELISA tests for the detection of dirofilariasis is not much helpful (7). In Iran, human and animal dirofilariasis with D. repens has been reported from 11 provinces. To date, 15 cases of human dirofilariasis have been reported in Iran (4, 6). In 2015, Maraghi et al have reported a case of breast Dirofilaria repens from Abadan, Southwest of Iran (21). Although ocular dirofilariasis has been reported from different parts of Iran (19, 22), but this is the second report of subconjunctiva dirofilariasis from southwest of Iran.

## Conclusion

Increasing of human dirofilariasis may be attributed to environmental changes with global warming, humidity and increase of mosquito vectors and breeding, agricultural development and change in social conditions, traveling and outdoor living.

## Conflicts of Interest

None

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