

Unusual location of *dirofilaria immitis* in A 5-year-old Boy's Hydrocele: A case report

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Case Report

Abstract

Introduction: Dirofilariasis is an infection caused by filarial nematode which belongs to the *Dirofilaria* genus. This parasite is known as dog heart worm and human is aberrant host for it. *Dirofilaria immitis* is the main sample of *Dirofilaria* species which infects human.

Case Report: In this rare case, we describe a 5-year-old boy who presented to general hospital and was infected to a immature worm. According to physical examination and ultrasonic imaging, diagnosis was based on incarcerated inguinal hernia and hydrocele. In the operating room, a worm was removed from spermatic cord.

Conclusion: This case indicates the necessity of appropriate epidemiological studies in enzootic areas.

Key words: *Dirofilaria immitis*, Dirofilariasis, Urology

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Introduction:

Dirofilariasis is an infection caused by a filarial nematode of the *dirofilaria* genus. Although man is not definitive host for *Dirofilaria* species, but *Dirofilaria immitis* (1) and *Dirofilaria repens* (2) are species which may infect human accidentally. *D.immitis* is also called "Dog heart worm" due to its location in its definitive host, the ventricles of dog heart (3). Bandar Abbas is a subtropical area located in south of Iran where some cases of human dirofilariasis may be seen (4). In Iran, 12 confirmed humans with dirofilariasis have been reported who were scattered across 11 provinces. Three (a case of testicular hydrocele and two pulmonary cases) have been attributed to *D.immitis* and the rest (four

subcutaneous, two ocular and three subconjunctival cases) to *D.repens*. There have also been two possible cases: the individual, with an ocular problem possibly caused by *D.conjunctivae*, and a patient with a swollen right forearm, possibly caused by *D.repens* (5).

Case Report:

Patient was a 5-year-old child with main complaint of left inguinal pain, presented to Shahid Mohammadi hospital in Bandar Abbas; and he was operated with preoperational diagnosis of inguinal hernia and hydrocele after ultrasonography.

In ultrasonography findings, both testes were normal in terms of size and echopathern, a well-

defined heterogeneous lesion was seen in superior aspect of left testis (9 mm in diameter) which represented sonographically, hernia, mild increased fluid amount of scrotum. The Complete Blood Counts (CBC) data of the patient is noted in table 1.

Table 1. Results of blood test in 5-year-old boy

Test	Results
WBC	7.1×10^3
RBC	4.83×10^5
HGB	11.3
HCT	33.8%
MCV	70.0
MCH	23.4
MCHC	33.4
Plt	215×10^3
Neutrophil	57%
Lymphocyte	42%
Eosinophil	1%

During surgical operation, the surgeon found an abscess-like mass in the spermatic cord. After operating the cord with an incision, a moving worm-like creature was seen and resected and sent to the laboratory of parasitology of Bandar Abbas Medical University. In macroscopic inspection, it was a 60 mm long milky nematode, with conic head and end, and without other notable macroscopic features. Then the specimen sent to Medical Sciences University of Tehran, school of public health, investigation and microscopic survey. Under microscope the overview of worm body indicated a kind of filarial; and seeing vulva in anterior portion and bifurcate uterus terminal and the form of esophagus and cuticle caused the detection of *D. immitis*. Large amount of cells were seen in this worm's uterus (Figure 1 and 2).

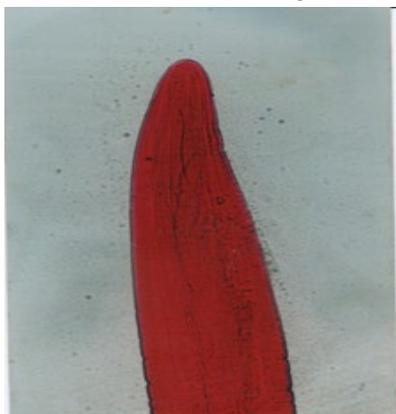


Figure 1. Anterior part of *Dirofilaria* sp

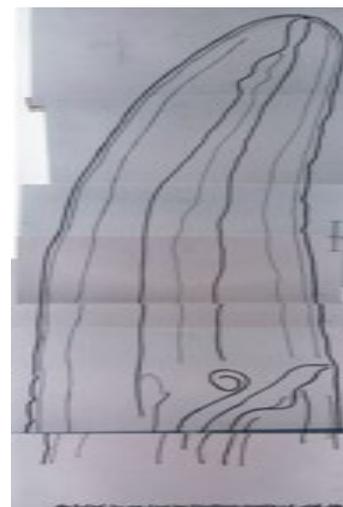


Figure 2. Details in of anterior part of *Dirofilaria* sp removed from 5-year-old boy - Bandar Abbas, Iran

In patient's past history, there was contact with a stray dog and his parents complained of living of stray dogs around their residence.

Conclusion:

Noticeable reports of subcutaneous *D. repens* are available (2, 6-8), in some cases, the worm was grown up for producing the larvae (9). Also there are some reports of *D. immitis* in subcutaneous, but it has also been reported in lung (2) and more rarely in heart, (10). However, Gilson and Theis reported their findings of the existence of *D. immitis* in human (male) reproductive system in a 28-year-old man in USA and during orchietomy operation (11). They proved their diagnosis by using Polymerase Chain Reaction (PCR); some cases of *D. repens* in male genitalia have been reported from Moscow by Bronshtein et al (12).

As clinical aspect, existing of this flaria in spermatic cord should be considered as a possible complication of dirofilariasis. Patient's conditions showed that this infection hadn't led to severe general reaction of body.

It's a question whether the human anatomic variations result in existing *D. immitis* in spermatic cord or settling of the worm make regional affects, in case of resuming the second hypothesis, it means that dirofilariasis with involvement of spermatic cord is a local infection with confined local reaction.

In laboratorial aspect, worm was not well developed, so definitive diagnosis about the species (*D.immitis*) and based on morphological criteria is not reliable. As epidemiologic aspect, it's considerable that even in European countries rate of dirofilariasis is raising (13). Plenitude of dogs and mosquitoes in Bandar Abbas makes a suitable condition for human infection by dirofilaria; and recently, an oral report of another dirofilariasis with involvement of spermatic cord was presented. However, as a symptom of this infection, another case of human dirofilariasis, is mild to moderate, it may concluded that the prevalence of this infection in Bandar Abbas city must be more than those reported and this indicates that related studies by using serologic techniques can help us know disease status in the region and make plans to confront it.

Nevertheless, killing the stray dogs and decreasing the amplitude of mosquitoes and using repellents are important clues.

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