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

Abdolreza Salahi-Moghadam 1, Iraj Moaydi 2, Hesamedin Banihashemi 3

Associate Professor Department of Parasitology 1, Infectious Disease Research Center, Hormozgan University of Medical Sciences, Bandar Abbas, Iran. Associate Professor Department of Parasitology 2, Tehran University of Medical Sciences, Tehran, Iran. Assistant Professor Department of Surgery 3, Hormozgan University of Medical Sciences, Bandar Abbas, Iran.

(Received 9 Jun, 2014    Accepted 16 Mar, 2015)

**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 an 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

**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 have been 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 compliant 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 Compete Blood Counts (CBC) data of the patient is noted in table 1.

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

<table>
<thead>
<tr>
<th>Test</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>WBC</td>
<td>$7.1 \times 10^3$</td>
</tr>
<tr>
<td>RBC</td>
<td>$4.83 \times 10^5$</td>
</tr>
<tr>
<td>HGB</td>
<td>11.3</td>
</tr>
<tr>
<td>HCT</td>
<td>33.8%</td>
</tr>
<tr>
<td>MCV</td>
<td>70.0</td>
</tr>
<tr>
<td>MCH</td>
<td>23.4</td>
</tr>
<tr>
<td>MCHC</td>
<td>33.4</td>
</tr>
<tr>
<td>Plt</td>
<td>$215 \times 10^3$</td>
</tr>
<tr>
<td>Neutrophil</td>
<td>57%</td>
</tr>
<tr>
<td>Lymphocyte</td>
<td>42%</td>
</tr>
<tr>
<td>Eosinophil</td>
<td>1%</td>
</tr>
</tbody>
</table>

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).

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 orchiectomy 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 Brunshtein 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.

References:


گزارش یک مورد آلودگی دایروفیلاریایی در هیدروسیل کودک 5 ساله، شهرستان بندرعباس

عبدالرضا مقدم، 1 ابرج مؤیدی، 2 سیدحسام بناهشمي، 3

1 دانشیار، گروه انسانی، دانشگاه علوم پزشکی هرمزگان، بندرعباس، ایران
2 استادیار، گروه جراحی دانشگاه علوم پزشکی هرمزگان، بندرعباس، ایران
3 مجله پزشکی هرمزگان سال پیش از شماره 55 صفحه 95-201

چکیده
گزارش مورد:
کودک مورد نظر برای درمان فتق اینگوئینال و هیدروسل مورد جراحی قرار گرفت و در حین جراحی این کرم مشاهده گردید.

نتیجه‌گیری:
مشاهده این مورد که متعاقب آن مورد مشابه دیگری نیز در بندرعباس دیده شده است، ضرورت توجه بیشتر این فیلر که در منطقه را امکان‌پذیر می‌کند، دارد. ممکن است بیشتر با تظاهرات بالینی ممکن شود که دایروفیلاریا در این منطقه در افرادی که ممکن است به‌طور تایپولوژیکی دایروفیلاریا وجود داشته باشد.

کیهان‌نامه دایروفیلاریا، دایروفیلاریاپارازئیک

کلیدواژه‌ها: دایروفیلاریا، دایروفیلاریاپارازئیک

نویسنده مسئول:
نکتر سیدحسام، بناهشمي

مشابه: ویژه باشندگان علم پزشکی

بیرویه: ایران

شماره: 3159

تاریخ: 2016

پست الکترونیک: he sa mba niha she mi@ hotmail.com

نویسنده مورد:
گزارش یک مورد آلودگی دایروفیلاریا در هیدروسیل کودک 5 ساله، شهرستان بندرعباس. مجله پزشکی هرمزگان 55 صفحه 95-201

ارجاع:
صلحی، مقدم. گزارش یک مورد آلودگی دایروفیلاریا در هیدروسیل کودک 5 ساله، شهرستان بندرعباس. مجله پزشکی هرمزگان 55 صفحه 95-201

دریافت مقاله: 1399/12/3

اصلاح نهایی: 1399/12/19

پذیرش مقاله: 1399/12/25

ارجاع:
صلحی، مقدم. گزارش یک مورد آلودگی دایروفیلاریا در هیدروسیل کودک 5 ساله، شهرستان بندرعباس. مجله پزشکی هرمزگان 55 صفحه 95-201

دریافت مقاله: 1399/12/3

اصلاح نهایی: 1399/12/19

پذیرش مقاله: 1399/12/25

ارجاعت: سیدحسام، بناهشمي. گزارش یک مورد آلودگی دایروفیلاریا در هیدروسیل کودک 5 ساله، شهرستان بندرعباس. مجله پزشکی هرمزگان 55 صفحه 95-201