

DIROFILARIATOSIS CAUSED BY DIROFILARIA REPENS - CLINICAL OBSERVATIONS

D. Vuchev*, H. Dimitrov*, I. Drandarska*, B. Chakarova**, I. Angelov**, T. Gogov***, G. Stancheva***, M. Chergova***, E. Marinova***, S. Mladenova***, P. Dimova***, A. Koruev****

* NCIPD Department of Parasitology and tropical medicine, Sofia

** Medical University Stara Zagora, Medical University Plevan

*** HEI Department of medical parasitology, Bourgas, Pazardjik, Shoumen, Vratza, Vidin

**** MBAL ophthalmology clinic, Pazardjik

SUMMARY

Dirofilariatoses are transmissible helminthozoonoses in dogs transmitted by different mosquito species and are rarely observed in men in Bulgaria. Only 12 sporadic cases of dirofilariatoses with cutaneous and ocular localization caused by *D. repens* have been diagnosed and registered. The clinical symptoms according to localization, paraclinical profile, pathohistology, parasitology and possible treatment are described.

Key words: *helminthosis, dirofilariatoses, clinical course, D. repens*

Bulgaria is not an endemic region for filariatoses, such as vusheriosis, brugiosis, loasis, onchocercosis; these have a high incidence and are imported from tropical countries. Unlike them, dirofilariatoses caused by several transmissible zoonoses belong to *D. species* are observed worldwide (2). In southern Europe two types of dirofilariatoses have been identified: with subcutaneous localization, caused by *D. repens* and affecting heart and lungs, caused by *D. immitis* (5). Specific end host are dogs and more seldom cats and other carnivores. Different mosquito species serve as vectors. While bloodsucking, they take in female microfilaria which in two weeks become invasive and further cause infection during bloodsucking.

Men are accidental hosts where filaria do not attain sexual maturity and their biologic cycle is interrupted (3).

Some cases of ocular localization have been observed already in 1928 by K. Pashev, Plovdiv. A. Boshev and N. Yankov established dirofilariatoses in a dog in 1956, and in 1961 I. Manev and G. Bachvarov described a case of human dirofilariatoses (4). During the last 10 - 15 years probably due to the increasing number of errant dogs the incidence of dirofilariatoses as diagnosed by parasitology departments has increased.

The extensive invasion in dogs as a principle source of infection is 1.56% for *D. repens* and 6.25% for *D. immitis* (10.9% in errant dogs), (1).

The aim of the present work was to describe some clinical and pathomorphological peculiarities of dirofilariatoses caused by *D. repens* in men.

MATERIAL AND DISCUSSION

During the last decade 12 cases of dirofilariatoses caused by *D. repens* have been established. Patients came from different parts of South and North Bulgaria: Shoumen, Cherven brag (region of Plevan), Vidin, Vratza, Sofia, Pazardjik, Straldja (region of Jambol), Bourgas. Seven were female and 5 male, aged between 21 and 60 years and exercised various professions, workers and civil servants included. Because of the long incubation period (2-8 months) it was not possible to anamnestically determine the exact time and place of invasion following the attack by infected mosquitoes.

Clinical symptoms observed depended on the localization of the parasite. In half of the cases symptoms were related to eyes. Initially, periorbital itching, palpebral edema, lachrimation and pain, conjunctival hyperemia and sometimes chemosis were observed. When ophthalmoscopically examined the helminth *D. repens* could be seen, most often subconjunctivally as a filiform body, several centimeters long.

In the cases of subcutaneous development of *D. repens*, slowly growing characteristic nodes up to 2 cm in diameter were observed, practically painless, elastic and soft. They were differently localized: in the neck, hands and arms, or the mammary glands (both in men and women). Their development caused local itching and erythema. Since their parasitic etiology has not been supposed, the initial diagnoses were: lymphadenitis, lipoma, fibroadenoma, masthopathy.

For both localizations - ocular and subcutaneous, the incision and extraction of the parasite were followed by a consultation with a parasitologist. This was evoked by the unusual finding - a living and moving helminth with considerable dimensions - up to 18 cm long. In two other cases, with localization in the region of the neck and the mammary gland the parasite could be visualized microscopically in the histological preparations after the extirpation of nodes. The paraclinical tests including CBC, differential blood count, and ESR before treatment were in reference ranges and no increase in the number of eosinophils was observed. A serological test has been developed (Spain) but it has not been introduced into every day practice. Blood tests for the presence of microfilaria are usually negative since the parasite does not attain reproductive maturity and microfilaria are not formed.

Pathohistology of an extirpated subcutaneous node in 2 patients showed a: granulomatous inflammation, with the parasite in the middle of the granuloma surrounded with fibrous connective tissue. The cuticulum was covered by a great number of eosinophils and PMN leucocytes and rarely by multinuclear cells type „foreign body“. On perpendicular sections of dirofilaria crest-like longitudinal striations can be seen (a total of 100 - 150). This feature is useful to differentiate it from *D. immitis* whose body is mostly smooth or transversally striated. Under the cuticulum, a layer of muscular tissue assuring motility can be seen. The symmetrical horns of the uterus can be seen bilaterally, eventually full of immature microfilaria.

The radical treatment of dirofilariatoses is surgical both in case of ocular or subcutaneous localization: incision after local anesthesia. Preliminary conservative treatment with diethylcarbamazepin is recommended in case of exact parasitological diagnosis in order to immobilize the helminth and thus aid surgery.

Despite of the fact that dirofilariatoses is a rare parasitosis its clinical features as well as its prevention deserve attention. The uncontrolled population of errant dogs in the country that are the main reservoir and source of infection as well as the inevitable seasonal mosquito fauna demand that general practitioners and medical specialists keep in mind the possibility of sporadic cases of dirofilariatoses caused by *D. repens*.

ACCEPTED FOR PUBLICATION: 22.12.03

CORRESPONDING AUTHOR:

D. Vuchev
Department of Parasitology
National Center of Infectious and Parasitic Diseases
26, Y. Sakazov Blvd.
1504 Sofia, Bulgaria

PROBLEMS

of Infectious and Parasitic Diseases

**NATIONAL CENTER OF INFECTIOUS AND PARASITIC DISEASES
SOFIA, VOLUME 31, NUMBER 2/2003**