

Case Report

Human *Dirofilaria repens* infection of the breast: a case reportSharif Maraghi^{1*}, Ali Sameri², Yasser Jeddi²¹Department of Parasitology, School of Medicine, Institute of Health Research, Thalassemia and Hemoglobinopathy Research Center, Infectious and Tropical Diseases Research Center, Ahwaz Jundishapur University of Medical Sciences, Ahwaz, Iran² Department of Parasitology and Mycology, Abadan Arvand International Division, Ahwaz Jundishapur University of Medical Sciences, Ahwaz, Iran

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Abstract

Background: Dirofilariasis is a common helminthic parasitic disease in both domestic and wild animals around the world, with canines as the principal reservoir host and mosquitoes as the vector. Human dirofilariasis has been reported from many parts of the world, including Africa, Australia, the Americas, Europe, and Asia. **Case Report:** A 40 year old woman from Abadan city Southwest of Iran referred to surgeon with a nodule on her right breast. Ultrasound and mammography revealed a nodule diagnosed as parasitic lesion. After resection of the nodule, tissue was placed in 10% formaldehyde and sent to pathology laboratory. In histopathological examination, cross section of a worm surrounded with necrotic tissue, associated with infiltration of Neutrophils, Eosinophils, and foreign body giant cells observed which was morphologically compatible with *Dirofilaria repens*. **Conclusion:** Human dirofilariasis should be considered in endemic regions.

Keywords: Dirofilariasis, *Dirofilaria repens*, Breast, Iran

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Dirofilaria (Nochtiella) repens is a subcutaneous zoonotic parasite of domestic and wild carnivores, transmitted by zooanthrophilic mosquito vectors including species belong to *Aopheles*, *Culex* and *Aedes*. *Dirofilaria repens* infection was rarely seen in human. Humans get infection accidentally through blood sucking mosquitoes [1, 2]. Zoonotic subcutaneous filarial infection due to *Dirofilaria repens* is reported from human in various parts of the world [3- 8]. The first human dirofilariasis in Iran was reported from north part of the country [9]. Although cases of Dirofilariasis due to *Dirofilaria repens* have been reported from Southwest of Iran [10], but the present case is a new case diagnosed in a female breast nodule from the same region.

Case Report

A 40 year old woman from Abadan city Southwest of Iran referred to surgeon with a nodule on her right breast. Ultrasound and mammography revealed a nodule. After resection of the nodule, tissue was placed in 10% formaldehyde and sent to pathology laboratory. In histopathological examination, cross section of a worm surrounded with necrotic tissue, associated with infiltration of neutrophils, eosinophils, and foreign body giant cells was observed which was morphologically compatible with *Dirofilaria repens* (Fig. 1).

Discussion

Inoculation of infective larvae of *D. repens* to human

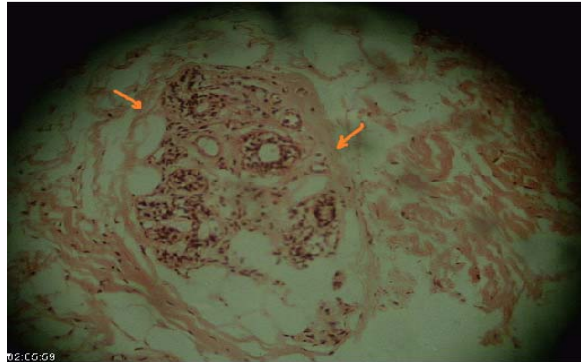


Figure 1. Cross section of *Dirofilaria repens* in breast tissue. Arrows indicate the cuticle of the worm (H&E staining) (400 X).

hosts during the bite of an infected insect results in invading of a variety of tissues and lead to formation of swelling, lump, cyst, nodule, abscess or granuloma [1, 5]. The development of parasites in human host is difficult and rarely subcutaneous containing gravid female worms have been only described [11, 12]. Infection in human is usually asymptomatic and acute symptoms are noted only when living worms enter the conjunctiva [10, 13]. Our patient complained of itching, swelling and local tenderness. This parasite can be located anywhere in the body [13-15], as in our patient was noted in breast. The diagnosis of human subcutaneous dirofilariasis can be made with certainty only after biopsy. Eosinophil count and measurement of IgE levels are of limited value in screening of dirofilariasis in patients with subcutaneous lumps. Surgical removal of the worm or the lesion is the treatment of choice. Most cases are diagnosed retrospectively, when the histopathological sections of biopsy or excision material are viewed and there is usually no need for chemotherapy. In recent years, cases of *Dirofilaria repens* have been reported from Africa [16, 17], Europe [18], Asia [9, 10, 19, 20] and India [21]. The present case is a breast *Dirofilaria repens* from the same region with no evidence of microfilaraemia.

Conclusion

Increasing of human dirofilariasis may be attributed to a change in social conditions, traveling and outdoor living, environmental changes with global warming, humidity and increase of mosquito vectors and breeding. The present case was diagnosed in 2013 and suggests that human dirofilariasis should be

considered in the differential diagnosis of a single migratory or non- migratory subcutaneous swelling, especially if the patients being from endemic areas.

Conflicts of Interest

The authors declare no conflict of interest.

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References

1. Pampiglione S, Canstri-Trotti G, Rivas F. Human dirofilariasis due to *Dirofilaria Noctiella repens*: A review of world literature. *Parasitologia*. 1995;37:149- 93.
2. Payan H M. Human infection with *Dirofilaria*. *Arch Dermatol*. 1978;114:593-4.
3. Marty P. Human dirofilariasis due to *Dirofilaria repens* in France. A review of reported cases. *Parasitologia*. 1997:383- 6.
4. Muro A, Genchi C, Cordero M, Simon F. Human dirofilariasis in the European Union. *Parasitol Today*. 1999;15:386- 9.
5. Pampiglione S, Rivas F. Human dirofilariasis due to *Dirofilaria Noctiella repens*. An update of world literature from 1999 to 2000. *Parasitologia*. 2000;42:231-54.
6. Pampiglione S, Rivasi F, Angeli G, Boldorini R, Incensati, RM, Pastormerlo M, et al. Dirofilariasis due to *Dirofilaria repens* in Italy: An emergent zoonosis: Report of 60 new cases. *Histopathology*. 2001;38:344- 54.
7. Raccurt CP. Dirofilariasis, an emergency and underestimated zoonosis in France. *Med Trop Mais*. 1999;59:389-400.
8. Vakialis N, Himonas CA. Human and canine dirofilariasis in Greece. *Parasitologia*. 1997;39:389- 91.
9. Siavashi MR, Masoud J. Human cataneous dirofilariasis in Iran: A report of two cases. *Iran J Med Sci*. 1995;20:85-6.
10. Maraghi S, Rahdar M, Akbari H, Radmanesh M, Saber A A. Human Dirofilariasis due to *Dirofilaria Repens* Ahvaz - Iran: A report of three cases. *Pakistan J Med Scie*. 2006;22(2):211-3
- 11- Pampiglione S, Schmid C, Montaperto C. Human dirofilariasis: Discovery of a gravid female of *Dirofilaria repens* in a subcutaneous nodule. *Pathologica*. 1992;84:77-81.
12. Pampiglione S, Canestri-Trotti G, Rivas F, Vakalis N. Human dirofilariasis in Greece. A review of reported cases and a description of a new subcutaneous case. *Ann Trop Med Parasitol*. 1996;90:319-28.
13. Koltas IS, Orcan K, Duran N. Subconjunctival infection with *Dirofilaria repens*. *Ann Saudi Medic*. 2002;22:75- 7.
14. Ratnatung N, Wijesundera M S. Histopathological diagnosis of subcutaneous *Dirofilaria repens* infected in humans. *Southeast Asian J Trop Med Pub Health* 1990; 30: 375- 8.
15. Macdougall LT, Magoon CC, Fritshe TR. *Dirofilaria repens*

manifestating as a breast nodule. Clin Pathol 1992; 97: 625- 30.

16. El- Nadi NA, Abdel- Noor H. Detection of *Dirofilaria repens* in a human, s Subconjunctival nodule in Qina (Egypt). 2009; 2 (2): 159- 60.

17. Elsayad MH, Tolba MM, Yehia MAH. Human subcutaneous dirofilariasis: Report of two cases of *Dirofilaria repens* in Alexandria, Egypt. Parasitologists United J. 2012;5(1):67-72.

18. Argy N, Sabou M, Billing A, Hermsdorff C, Candolfi E, Abou-Bacar A. A first human case of ocular dirofilariosis due to *Dirofilaria repens* in Northeastern France. J Trop Med. Article ID

698647, <http://dx.doi.org/10.1155/2011/698647>

19. Ashrafi K, Golchai J, Geranmayeh S. Human dirofilariasis due to *Dirofilaria (Nochtiella) repens*: Clinically suspected as cutaneous fascioliasis. Iranian J Pub Heal. 2010;39(1):105-9.

20. Fallah Tafti MR , Hajilary A, Siatiri H, Rokni MB, Mobedi I, Mowlavi GH. Ocular Dirofilariasis, a Case Report. Iranian J Parasitol. 2010;5(3):64-8.

21. Damle AS, Iravane (Bajaj) JA, Khaparkhuntikar MN, Maher GT, Patil RV. Microfilaria in Human Subcutaneous Dirofilariasis: A Case Report. J Clinic Diagn Rese. 2014;8(3):113–4.