Case Report

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Subcutaneous Human Dirofilariasis A Rare Case Report from Mumbai, Maharashtra

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Abstract

Subcutaneous human dirofilariasis is caused by the zoonotic filariae, Dirofilaria repens. The frequency of reports is increasing in literature during the last few years and is considered by some authors as an emerging zoonosis.In India, majority of the cases have been reported from Kerala, case reports from other parts of the country is rare. Here, we report a case to focus attention on this rare cause of a subcutaneous nodule which is often misdiagnosed or overlooked. We report a rare case of subcutaneous Dirofilariasis from Mumbai, Maharashtra. A 15-year-old boy who experienced a cosmetic subcutaneous cheek swelling on the left side of face, since 1.5 years. No pain, no sinus and no discharge. A complete hemogram was done which was normal. No eosinophilia was seen. Since the clinical diagnosis was a soft tissue lesion, a radiograph was not taken. The lesion was excised under local anaesthesia, which revealed a filarial nematode compatible with adult gravid female of the Dirofilaria repens, a zoonotic filariasis that causes subcutaneous dirofilariasis in dogs and cats.

Keywords: *Human dirofilariasis, Dirofilaria repens, Subcutaneous cheek swelling, Cheek, Face*

Introduction

Dirofilariasis is one of the zoonotic filarial infections inadvertently affecting the humans. It is caused by filarial nematodes of genus Dirofilaria, which naturally infects several domestic and wild animals, though canines are the principal reservoir hosts. There are about 40 recognized species of Dirofilaria and at least six of them i.e., Dirofilaria immitis, Dirofilaria repens, Dirofilaria striata, Dirofilaria tenuis, Dirofilaria ursi and Dirofilaria spectans are known to cause accidental infections in humans.[1] The lung lesions are caused by Dirofilaria immitis while the subcutaneous lesion is caused mostly by Dirofilaria repens. It is transmitted by the bite of mosquito especially of Anopheles, Aedes and Culex species.[2]

Case Report

This case report describes the excision biopsy specimen received in the Department of Pathology, Fauziya Clinipath centre, Kurla (West), Mumbai,Maharashtra in August 2022. The clinical details showed a cosmetic 0.7x0.5 cm swelling on the left cheek since 1.5 years in a 15 yr old boy. No sinus or discharge from the swelling.No eosinophilia. No travel history. No cat or dog exposure. Excision biopsy was done and the postoperative period was uneventful. The entire tissue was processed using routine technique and sections were examined using Haematoxylin and eosin stain.

Histopathological examination with Haematoxylin and eosin staining reveals a cystic cavity with a parasite. The cross section of the parasite shows thick cuticle with prominent muscle layer. The body cavity showed cross section of gravid uterus and intestinal tube. Dense inflammatory tissue response in form of numerous neutrophils and few lymphocytes with macrophages were seen lining the cyst cavity. Above morphological features are consistent with Dirofilaria repens.

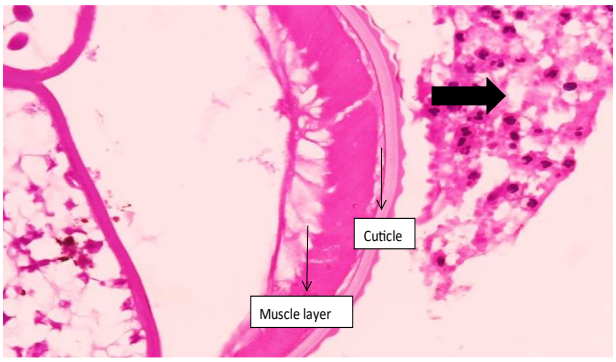

Figure 1: A. H&E stained(100x) section showing thick cuticle with longitudinal striations in external muscular layer in transverse sections of Dirofilaria repens surrounded by dense inflammatory tissue response (Bold arrow)

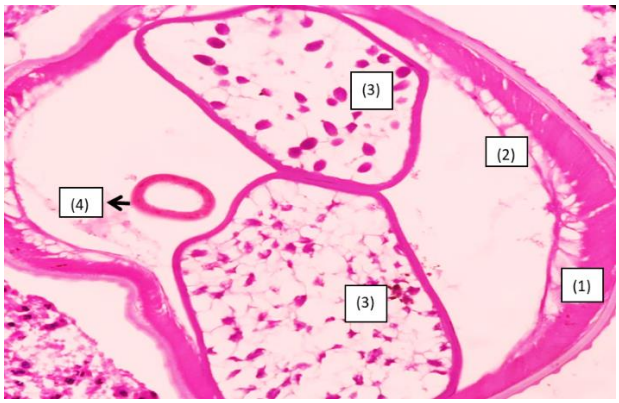

Figure 2: B. H&E stained(100x) Transverse section of Dirofilaria with thick eosinophilic cuticle (1), underlying external muscle layer (2) encasing the gravid uterus (3) and the intestinal tubes (4).

Discussion

The first documented report of human dirofilariasis dates back to the report of Addario in 1885 from Italy. The reports of dirofilariasis are increasing nowadays and many authors have considered this as an emerging zoonosis.[3]

In India, the first case of subcutaneous dirofilariasis from Kerala is reported by Senthivel and Pillai (1999) in a lady from Palakkad district.[4]

Since only isolated case reports of human subcutaneous dirofilariasis are available, we present this case to create awareness about the condition, which should be considered in any patient presenting with an acute or chronic, single, often asymptomatic, subcutaneous nodule. This is especially significant because of the world wide distribution of the nematode and the frequent absence of a history of contact with animals.Though it often resolves spontaneously, surgical removal is recommended for persistent lesions, resulting in an excellent outcome.[5]

Conclusion

Human dirofilariasis is an emerging zoonotic infection attributed to increased ecological niche for the breeding of vector species, global warming, and higher incidence of canine dirofilariasis. As most of the Dirofilaria infections are likely undiagnosed and unpublished, we emphasize the need for increased awareness of this nematodal infection, and differentiating it from its mimics, including malignancy and avoid inadvertent surgical management. Chemotherapy is not recommended for human dirofilariasis as microfilaremia is extremely rare. The definitive choice for treatment is the surgical removal of the worm to rule out the malignant origin of the nodule. Complete resection of subcutaneous nodules is a relatively simple procedure. The prognostic outcome is excellent in patients with subcutaneous dirofilariasis.[6] It is very important for the pathologists to be familiar with the histopathological characteristics of nematode since the demonstration of adult dirofilarial worm in the tissue section remains the gold standard for the diagnosis of dirofilarisis. Due to globalisation, there are many diseases, which have become prominent in emigrants. Travel history is important when building a differential diagnosis and often may be overlooked.

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