

Rising Threat-Human Dirofilariasis Linked to Climate Change and Emerging Zoonoses

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Abstract: *Dirofilariasis is a rare zoonotic filarial infection transmitted by several species of mosquitoes. Recently, sharp rise in human Dirofilaria repens infections in various parts of the world, which is considered an emerging zoonotic infection transmitted to man by zoonanthophilic blood-sucking insects. Clinicians should consider similar infections, especially in light of current climate changes and the emergence of various zoonoses. We present a case of human dirofilariasis of the posterior aspect of the neck and also emphasize increased awareness of this entity for clinicians and pathologists in the differential diagnosis of patients with migratory nodules.*

Keywords: Dirofilariasis, filarial, zoonanthophilic, zoonoses, migratory nodules

1. Introduction

Zoonotic infections have been reported in all parts of the world but human filariasis recognition gains importance as dirofilariasis in humans is a fast-emerging zoonosis in Kerala. The worm commonly known as dog heart worm, is widely dispersed and found in the tropics, subtropics, and temperate zones. The first case was reported from Italy in 1885, which has the highest prevalence of dirofilariasis. India has a relatively lower prevalence, but there is probably a focus on human infections with *D. repens* in Kerala. The first case in India was reported in Kerala in 1976 by Joseph et al. In India, cases have also been reported from Assam, Maharashtra, and parts of Karnataka. Most of the documented cases in India had ocular infections, few subcutaneous and very few intramuscular cases have been reported. Dirofilariasis should be considered as differential diagnosis for migratory subcutaneous or intramuscular swellings and conjunctival nodules in Kerala and elsewhere in southern India.

2. Case

A 60 year old female presented with a swelling on left upper aspect of neck for 2 months duration with intermittent pain. General examination and vitals within normal limits. Local examination revealed swelling in the left upper posterior aspect of neck, over the insertion of sternocleidomastoid about 2cm*1cm –firm in consistency, non tender, nonpulsatile, mobile in the horizontal direction and not in the vertical direction, prominent on turning head to right with the plane of the swelling intra muscular.

3. Observation

Routine blood investigations were within normal limits except for eosinophilia and raised absolute eosinophil count. Ultrasound report of left retro auricular swelling showed evidence of 1.3*0.5cm hypoechoic lesion in the substance of left sternomastoid muscle near insertion into left mastoid process with a tubular serpiginous structure noted within with active movements- suggestive of parasitic cyst. During course in the hospital, surgical excision of the cyst done and single

live parasite of 11cm identified as *Dirofilaria repens*.The patient clinically improved on follow-up.

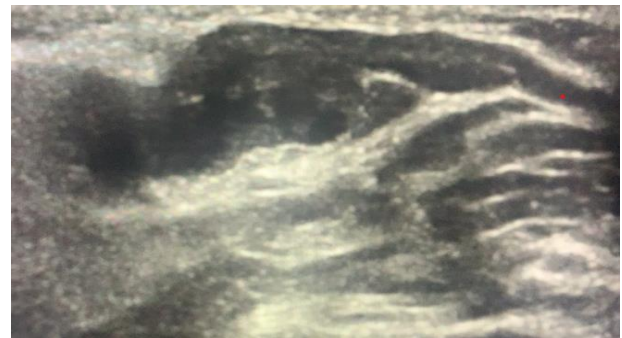


Figure 1: USG left retro auricular swelling-parasite



Figure 2: Surgical excision-Dirofilaria species



Figure 3: Microscopy-Thick laminated cuticle-Dirofilaria

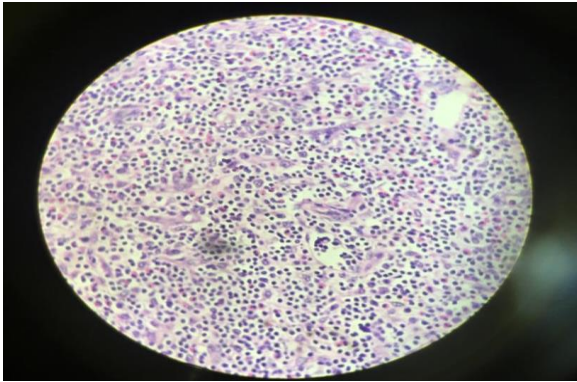


Figure 4: Section-dense inflammation

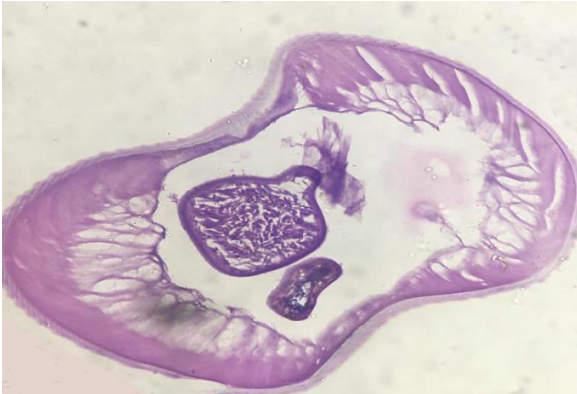


Figure 5: Cross section-thick eosinophilic cuticle with lateral ridges, underlying thick muscular layer, lateral cords and gravid uterus - female *Dirofilaria repens*

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4. Clinical Significance

Physicians should have a high index of suspicion for parasitic infections while evaluating patients with features of solitary migratory swelling in the setting of eosinophilia and cost-effective diagnostic serological tests to be developed which would improve the prevalence rate and patient care.

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