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Subcutaneous Dirofilariasis of Forearm - An Unusual Presentation in Human

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Abstract: ***Human subcutaneous dirofilariasis (HSD) is a rare zoonotic infection caused by filarial worms of the genus Dirofilaria. Recently it has been considered as emerging zoonotic infection. It is transmitted to man by zooanthrophilic blood sucking insects. The human dirofilariasis recorded in India are mostly ocular and very few cases are extra-ocular. We hereby present a case of subcutaneous dirofilariasis of forearm in human.***

Keywords: Dirofilariasis, forearm, human, subcutaneous

1. Introduction

The human beings are infected with species of filariasis normally found in animals. Among these zoonotic infections, the commonest is that reported due to Dirofilaria species—Dirofilariarepens or Dirofilariaimitis. The lung lesions are caused by Dirofilariaimitis while the subcutaneous lesion is caused mostly by Dirofilariarepens. It is transmitted by the bite of mosquito especially of anopheles, aedes and culex species.

The principal reservoir of D. repens is the dog and humans are accidental hosts with patent infections being extremely rare. Differential diagnoses of human subcutaneous dirofilariasis (HSD) include neoplasia and other granulomatous diseases and a definitive diagnosis usually requires surgical removal and examination of a lesion

Majority of cases of human dirofilaria are reported from southern and eastern Europe, Srilanka, Italy, France, Greece and Spain. Human dirofilaria has not been widely recognized in India butcases have been reported from Assam, Maharashtra, and parts of Karnataka[1,2].We present this case because of very few cases of subcutaneous dirofilaria have been reported and most of the documented cases being dirofilaria associated with ocular infections[3].

2. Case Report

A 22-year-old male patient presented with painless mass in the left forearm for past 5 months. On examination the mass was measuring approximately 3 × 2 cmsituated in the volar aspect of the proximal forearm 3 cms below the elbow crease. The mass was mobile, firm, non-tenderwith well-defined margin and subcutaneous in location. All other systemic examination and laboratory investigations were normal. It was clinically diagnosed as sebaceous cyst an advised complete excision of the mass for definitive diagnosis. The excised mass was 3 × 2 cm and grey-white. The cut surface was grey-white with necrotic areas.

Figure 1

Forearm mass: Measuring approximately 3 × 2 cm situated in the volar aspect of the proximal forearm 3 cms below the elbow crease

Hematoxylin and eosin stained sections showed cross-sections of nematode, which is surrounded by an inflammatory granulation tissue composed of eosinophils, lymphocytes, and occasional foreign body giant cells. An outer surface of the nematode shows cuticle showing fine transverse striations and prominent longitudinal ridgeswith these features the worm was identified as an adult, female.

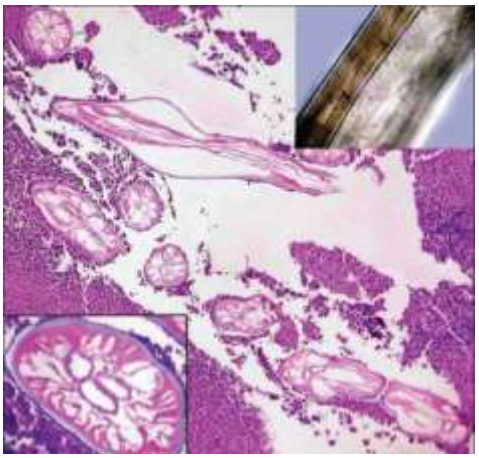

Figure 2

Histopathology section showing dirofilariarepens with dense inflammatory reaction (hematoxylin and eosin (H and E), ×100)

3. Discussion

Dirofilariasis is a parasite infection of animals and rarely human with nematodes of the genus Dirofilaria. Dogs, monkeys, and cats are the primary host and mosquitoes such as Mansoniauniformis, Mansoniaannulifera, and Ades aegypti are considered potential vectors[4]. In humans, two types of diseases, namely, pulmonary dirofilariasis, primarily caused by Dirofilariaimmitis, and subcutaneous dirofilariasis, primarily caused by Dirofilaria tenuis and Dirofilariarepens, can be seen [4]. The parasite was first recognized by Railliet and Henry in 1911 from a dog and Skrjabin (1917) had described a human case under the name of Loa extraocularis[5, 6]. Prevalence of this disease is increasing and emerging as a significant health problem in different areas of the world. The disease is said to be commonly encountered in the 4th to 5th decade of life while showing significant female predilection. Significant geographical variation was observed as an endemic in India and Sri Lanka other than Africa, Asia, Australia, Europe, and America [7]

A study of the aetiopathogenesis shows that the adult nematode lives in subcutaneous tissues of their natural hosts and attain full size and deposit microfilaria in blood. Since the humans are a dead-end host, the nematode in humans does not reach sexual maturity and remains nonfertile. Consequently microfilaria are not released into the peripheral blood in humans and, due to the presence of an adult nematode in the subcutaneous tissue, chronic inflammatory infiltration can occur in the surrounding tissue forming a parasitic granuloma [7, 9]. Clinical features can be seen as single nontender subcutaneous nodule. Mostly the patients are asymptomatic and no particular sensation is attributable to the insect bite. Subsequent formation of subcutaneous or subconjunctival suppurative nodules after 2–12 months can be encountered, or very rarely satellite lymphadenopathies with hyperpyrexia can occur. In the eyes it can cause detached retina, crystalline opacity, glaucoma, uveitis, episcleritis and limited loss of vision. Subcutaneous migration of parasite in tissues of head can cause trigeminal neuralgia [7, 8, 9]. Hematological investigations such as FBC can show peripheral hypereosinophilia as this process has a chronic inflammatory process. Radiological investigations such as computed tomography scan and magnetic resonance imaging may be useful. Color Doppler imaging also may be useful in the diagnosis of the disease. Serological investigations such as measuring the reduction in the level of anti-D. repens serous antibodies by immunoenzymatic means for 3–6 months from the time of surgery can be used in the follow-up care of patients. Investigations like Giemsa stain and fine needle aspiration cytology followed by excisional biopsy are useful in confirming the diagnosis. Once the excision of the lesion is performed parasitological evaluation can be performed for the worm specimen [9]. As humans are the end hosts, surgical excision of the worm is the appropriate management. Human dirofilariasis is usually regarded as an infection by a single worm. Oral therapy with diethylcarbamazine (DEC) has also been recommended to destroy occult worms [10].

In summary, dirofilariasis should be included in the differential diagnosis of subcutaneous nodules especially in an endemic area. Although rare in subcutaneous form adequate investigative work-up and treatment is essential for recovery.

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