

Case Report

HUMAN DIROFILARIASIS DUE TO D.REPENS PRESENTING AS A CHEST WALL SWELLING : A RARE CASE REPORT.

Harish S. Permi¹, Caren D'Souza², K.R. Bhagavan³, Mary Raju & Pooja Sarda⁴

Associate Professor¹, Department of Pathology, Assistant Professor², Professor³,
Post graduate students⁴, Department of Surgery,
K.S. Hegde Medical Academy, Nitte University, Mangalore - 575 018.

Correspondence:

Harish S. Permi,

Mobile : 9964131827, E-mail : drharish01@gmail.com

Abstract :

Primary Dirofilariasis is caused by a Zoonotic filarial nematode. It is transmitted to humans by Culex, Aedes, or Anopheles mosquitoes, which ingest blood-containing microfilaria from affected dogs, cats, or raccoons. Chest wall tumors are uncommon lesions that originate from blood vessels, nerves, bone, cartilage, or fat. We report a case of Human Dirofilariasis due to D. Repens occurring in the chest wall in a 32 year old male. Clinical diagnosis of benign chest wall tumor was considered and it was excised. Histopathological examination confirmed it as Dirofilaria repens. On regular follow up he is doing fine.

Keywords : Dirofilariasis, D. Repens, Chest wall swelling.

Introduction :

Primary Dirofilariasis is caused by a Zoonotic filarial nematode. It is transmitted to humans by Culex, Aedes, or Anopheles mosquitoes, which ingest blood-containing microfilaria from affected dogs, cats, or raccoons.^[1] Human Dirofilariasis is rare. It usually presents with nodular lesions in the lung, subcutaneous tissues, peritoneal cavity, or eyes. Dirofilaria does not mature into fully gravid worms in humans. Reported cases of Dirofilaria infection in humans included two species, Dirofilaria immitis and Dirofilaria repens.^[2] Chest wall tumors are uncommon lesions that originate from blood vessels, nerves, bone, cartilage, or fat.^[3] We report a case of Human Dirofilariasis due to D. Repens occurring in the chest wall in a 32 year old male who presented with swelling. Clinical diagnosis of benign chest wall tumor was considered and it was excised. Histopathological examination confirmed it as Dirofilaria repens. This case is presented here for rare site of occurrence in the chest wall.

Case report :

A 32- year- old male from northern Kerala, presented with chest wall swelling on left side since two months. Local examination showed a soft, nontender, mobile swelling measuring 3x2 cms. Routine haematological and biochemical investigations were within normal limits. Serology for HIV &HBSAG was nonreactive. Clinical

diagnosis of chest wall tumor was considered. Fine needle aspiration cytology done was inconclusive. The swelling was completely excised and sent for histopathological examination. Grossly, the tissue was well circumscribed, grey brown measured 3x2x1cms. Cut section was greywhite with central suppuration. Microscopy revealed fibrocollagenous tissue and densely rich infiltration with eosinophils, lymphocytes, plasma cells, occasional giant cells surrounding the adult dead worm.[Figure 1] It had thick multilayered cuticle, with outer most layer showing prominent wavy longitudinal ridges and transverse striations.[Figure 2] The muscle layer below the cuticle was well developed and the body cavity showed uteri and intestinal tube. Based on these features, the worm was morphologically identified as an adult female D. repens. Final diagnosis of subcutaneous human Dirofilariasis due to D .repens was considered. On regular follow he is doing fine.

Discussion :

Human Dirofilariasis is a Zoonotic infection most commonly caused by Dirofilaria repens. The genus Dirofilaria includes various species that are natural parasites of dogs, cats, foxes and wild mammals. Human infection caused by this genus is called Dirofilariasis. It is a Zoonotic infection and seen world-wide. It is caused by D. repens, D. immitis, D. tenuis, D. ursi. It has not been widely

recognized in India. There is probably a focus of human infection with *D. repens* in Kerala. Among the documented cases of human Dirofilariasis caused by *D. repens*, recorded in India, most of them had ocular infections and few had subcutaneous involvement of the face. [4] Infections in humans are usually asymptomatic and acute symptoms are noted only when living worms enter the conjunctiva. Occasionally transitory inflammatory swellings or isolated nodules are observed, which are 0.5-2.5 cm in size and may be tender or painful. [5] The most important risk factors regarding human infections are mosquito density, warm climate with extended mosquito breeding season, outdoors human activities and the abundance of microfilaraemic dogs. [6] Patients usually present with single migratory nodules which may or may not be tender. Surgical removal of the worm is the treatment of choice.

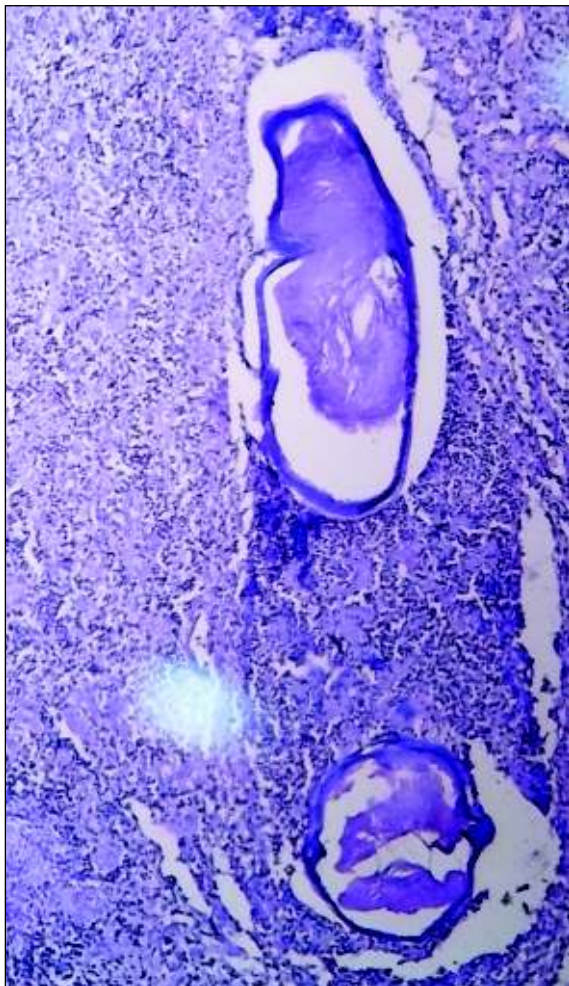


Figure 1) Microscopy showing densely rich infiltration with eosinophils, lymphocytes, plasma cells, occasional giant cells surrounding the adult dead worm. (Hematoxylin & Eosin X 100)

Most cases are diagnosed retrospectively; when the histopathological sections of biopsy or excision material are viewed. There is no need for chemotherapy as microfilaraemia is extremely rare. [2] Our case was a 25 year male presented with chest wall swelling. Clinical diagnosis of chest wall tumor was considered and it was excised. Exact identification of the species may be possible after studying the fully matured worm. *D. repens* has a cuticle of 20 µm thickness, transverse striations, and large numbers of external longitudinal ridges. *D. immitis* can be differentiated from *D. repens* by the absence of longitudinal ridges and transverse striations. In histopathological examination our case showed similar features hence diagnosed as Human Dirofilariasis due to *D. repens*. In order to confirm the diagnosis of *D. repens* infection, DNA extraction followed by panfilarial polymerase chain reaction (PCR) may be performed. [7] In developing countries like India, owing to the low prevalence rate, PCR methods and standard antibody detecting tests are not available for the diagnosis of *D. repens*.

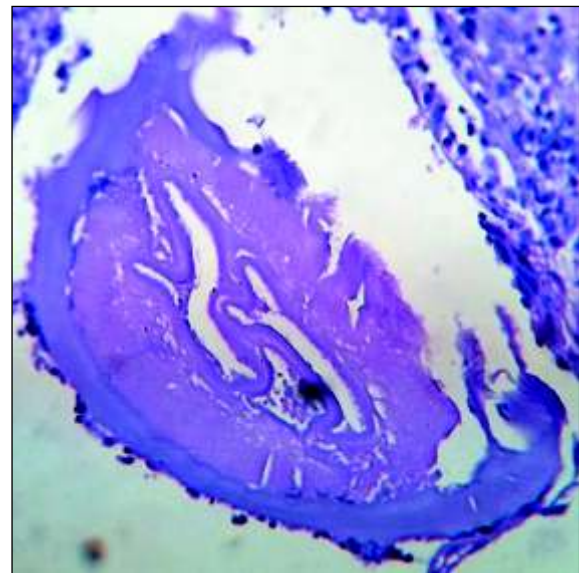


Figure 2) Microscopy showing thick multilayered cuticle, with outer most layer showing prominent wavy longitudinal ridges and transverse striations. (Hematoxylin & Eosin X 400)

Conclusion :

Human cases of Dirofilariasis are most probably underreported because many of them remain undiagnosed or unpublished. Dirofilariasis should be

considered as differential diagnosis for solitary swelling even at rare sites, chest wall and lower extremities; commonly they are known to involve subcutaneous tissue around ocular region.

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