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SUB – CONJUNCTIVAL DIROFILARIASIS –AN EMERGING ZOONOTIC INFECTION -FIRST CASE REPORT FROM EASTERN PART OF INDIA

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Abstract:
Dirofilariasis is a worldwide Zoonotic disease, mainly affect the domestic and wild animals and Human is an accidental host. In India human dirofilariasis is occasionally reported and mainly from Kerala and western part of India and mostly are caused by Dirofilaria repens. We report a case of 54 yrs male presented with RE sub-conjunctival dirofilariasis from WB, India and the parasite was Dirofilaria immitis. The purpose of this case report is to take a note of this emerging zoonosis in the Eastern part of the country and probably first case report of sub conjunctival dirofilariasis from this part of India and surgically removal of live worm is sufficient and No need to give anti-helminthics' for prophylaxis as we noted no recurrence even after one year follow up

Keywords: Emergence, Zoonotic, Dirofilariasis

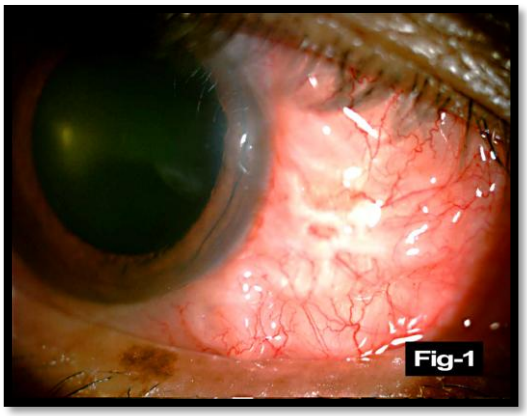
Introduction : Dirofilariasis is an Emerging zoonotic parasitic infection caused by the parasite Dirofilaria species .It is mainly reported from Mediterranean countries like Italy (1,2,) while ,in India it is being occasionally reported from mainly southern and western parts of India .Different species of dirofilaria can be found in human causing different clinical presentation and 6 out of 40 species of dirofilaries are known to cause human infections ,varies according to geographical location (3). D.*repens* and D.*immitis* are increasingly reported as human pathogen s(4).*D.immitis* is a common parasite of canine cardio-vascular system and a potential human parasite whereas *D.repens* is commonly found in sub cutaneous tissues of Dog and has been reported as human pathogen in different parts of world. Sub conjunctival dirofilariasis due to *D.repens* have been reported from different parts of India (3). We present a case of Sub-conjunctival dirofilariasis caused by *D.immitis* from Eastern part of India which is probably the first case reported from this part of country

Case report: A 55 yrs old male patient from outskirts of Kolkata, WB, India of Good socio-economical background, father of a MBBS general practitioner came to our hospital for second opinion regarding RE Pain and redness with mild swelling for last one month, initially consulted

with local ophthalmologist where he was diagnosed as allergic conjunctivitis and treated by topical steroid & antibiotics combination with topical CMC. Consequently redness subsides but irritation and feeling of something moving in eyes persisted for which he came to us

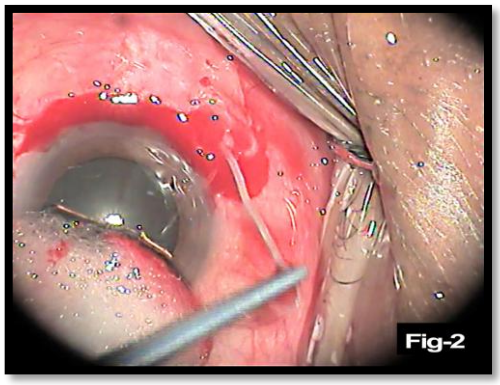
He is a known case of DM and HTN under Medications, old smoker, no H/O Pets and no recent H/O Foreign travel within last two years

On clinical examination BE BCVA 6/9P,N6.On Slit lamp bio-microscopy RE lids and adnexal are normal, a baggy swelling noted in the inferonasal part of bulbar conjunctiva of RE, a worm like structure noted moving around the nasal bulbar sub-conjunctival space , Cornea was clear , AC – Quiet , pupil CCRL, Lens Early NS , LE – unremarkable , OU- NCT 12mmof Hg, , Fundus – RE – an old chorioretinitis patch was noted in sup –temporal peripheral part , rest WNL , LE – WNL , OU EOM –Full in all direction .



Sub-conjunctival Live Worm in nasal side of bulbar conjunctiva

An USG –B scan was done to note the extent of worm and ruled out underlying scleral perforation, routine Blood test was normal with no eosinophilia and peripheral blood smears negative for microfilaria, stool for OPC also negative. So, a provisional diagnosis RE-Subconjunctival live worm was made.



Intra -Operative extraction of Live Worm



Extracted Live worm of about 11.5cm long

A Surgical excision of worm in Toto done under LA with every precaution to address the Anaphylactic shock. A circumferential incision was given from 2 o clock to 4 o clock along the limbus and gradual blunt dissection of sub conjunctival tissues are done, then suddenly the head of the worm was popped out from wound which has been gentle, but steadily grasped by blunt forceps and pulled out in whole from sub-conjunctival space .The worm was about 11.5cm long and grayish white in color and sent to microbiology lab for Identification. Sub conjunctival tissue was dissected 5mm beyond the margin where the worm was present, and the surface was irrigated with betadine and gentamycin solutions and secured by Fibrin glue. Patient was post operatively treated by tapering dose of eye drop Prednisolone 1%, Moxifloxacin 0.5% - 6times for 2weeeks and 0.5%

CMC 1hourly with tab P650 + tab Pan 40 SOS if Pain, No oral anti helminthics prescribed and afterwards he was followed up for 2 yrs with mild drop of BCVA for OU- NS I-II, without any recurrence.

Discussion: Human Dirofilariasis is an emerging zoonotic disease in India. First two cases of human ocular dirofilariasis in India were reported from Kerala in 1976 (5).

The genus Dirofilaria belongs to the family Onchocercidae of the order Spirurida and phylum Nematoda. This filarial nematode causes natural infection in dogs, foxes, cats and replicates in animal body and enters the circulation in the form of microfilaria which is transmitted to other animals or humans by mosquito(Culex, Aedes or Anopheles) bites which are intermediate host .Human is accidental host and in human dirofilarial parasites causes pulmonary , ocular or subcutaneous lesions , ocular lesions usually periorbital, intra-ocular ,or sub-conjunctival reported (6)D. repens mainly causes subcutaneous lesions and *D.immitis* mainly causes pulmonary infections in Humans (7).Ocular infections most commonly due to *D.repens* in India present as Irritation , watering , swelling, Foreign body sensation.

Our Patient did not give any history of Pets or recent foreign travel within last two years, probably got infection by mosquito bites and microfilaria of Dirofilaria travelled to choroidal circulation and vitreous cavity probably, followed by sub-conjunctival space and presented as Live adult Worm of 11.5cm. There is no specific diagnostic blood test for ocular dirofilariasis. Filarial antibody and microfilaria in blood are also negative (8). Eosinophilia occurs <15% of *D.immitis* and rarely in *D.repens* (7). In our case blood reports are WNL, with no significant eosinophilia and smear was negative for microfilaria and stool examination was negative for OPC.



Head of the worm Dirofilaria immitis **Tail of the worm Dirofilaria immitis**

Species identification is usually done by morphological characteristics of cross section of worm – D.repense is identified by presence of external longitudinal cuticular ridges and transverse striation which are absent in *D.immitis*. Simple surgical extraction of worm is the treatment of choice. Antifilarial medication is usually not indicated in human dirofilariasis as in human dirofilariasis is caused by single worm infection (9). In our case, extracted worm was 11.5cm long with ,0.5cm thick and extracted live worm sent to microbiology lab and is diagnosed as D.immitis as it did not have longitudinal cuticular ridge on cross section with absence of horizontal striations and already we have discussed that in human D.immitis causing pulmonary infection whereas in our case it is found in ocular tissue (sub –conjunctival) – it's the Uniqueness / specialty of our presentation with no evidence of recurrence and clinically quiet eye with BCVA 6/9 ,N6 with early NI, over the 2yrs follow up

S/L No	Year	State	Specific organism	Site of Parasite	Journal
1	1976	Kerala	D.repens	S/C	Indian J MedMicro201129(4)
2	2010	Assam	do	S/C	IJOPath-Micro2010
3	2014	Gujrat	D.repens	S/C	Ijomay2014
4	2017	Mumbai	do	S/C	Jcdr.net by Dr. Sachee Agarwal

5	2017	New Delhi	D.repens	S/C	JOJ Case Study vol1/issue3/2017
6	2017	Kerala	do	S/C	KJO2017; 29:136-138

Previous Publications of Dirofilaria with years and Journal details

Conclusions: Dirofilarial infections appear to be increasing in India as well as throughout different part of the world, increasing number of such cases suggest more attention toward this emerging zoonosis with prompt diagnosis, specific treatment and effective vector control. In India, Ocular Dirofilariasis by D.repens cases increasing in number, but D.immitis can also infect ocular tissue which has been documented in our case and there is no specific test to diagnose Dirofilariasis in humans and species identification of dirofilarial worms are done by morphological characteristics of cross section of worm and surgical extraction is the only specific treatment .In our best knowledge this is the first case report of sub conjunctival *D.imitis infection* from Eastern part of India .

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