Worm Wobble - Subconjunctival Dirofilaria

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Introduction: Ocular zoonotic infections by filarial worms are not uncommon. Most of them are caused by the genus Dirofilaria. Human dirofilariasis caused by Dirofilaria Repens have been reported to occur widely throughout Asia, Europe and Africa. Reports of this infection from India are however limited. The involvement of the eye may be periorbital, subconjunctival or intraocular. In this report we describe a case of Dirofilaria Tenuis presenting as a subcutaneous swelling of the bulbar conjunctiva.

Case Report:
A 60 year old lady reported to our out-patient department with foreign body sensation in the right eye of 2 days duration. On examination, there was a nodular swelling in the inferomedial quadrant of the right eye. Slit lamp examination showed a motile worm in the subconjunctival space. (Fig 1 & 2) There was no other skin nodule anywhere on the body. There was no lymphadenopathy. The patient was not suffering from any other systemic or local manifestation. Routine laboratory tests were within normal limits. Blood smear was negative for microfilaria. There was no eosinophilia.

Using topical anaesthesia, the live parasite was surgically removed by excising the conjunctiva, under the slit lamp microscope. The extracted worm was milky white resembling white thread (Fig 3 & 4). The worm was thin and cylindrical wearing 12 cm in length with a maximum diameter of 45 mm. Microscopic examination of the worm revealed that the anterior end of the worm was slightly tapering and had a rounded head. The parasite had a thick unsegmented cuticle with characteristic longitudinal ridges and cross striations. The oral end showed a conspicuous mouth cavity. The posterior end was bulbous. Based on the morphologic features, the worm was identified as Dirofilaria Tenuis.

Discussion
Human dirofilariasis is a cosmopolitan zoonosis. The dirofilaria are natural parasites of mammals and are transmitted to man by zooanthophilic mosquitoes. Though nearly forty species of dirofilaria have been identified, only a few have been reported to cause human infection; the most common being Dirofilaria
Immitis, a parasite of dogs, D.Tenius, a parasite of raccoons, D.Repens, a parasite of dogs and cats and D.Ursi a parasite of bears.\(^3,4\)

Formerly D. Repens and D. Immitis which are dominantly parasites of dogs, were of epidemiological bearing in man. However during the last 20 years, a few other species of Dirofilaria infections were notified, especially by A. Joseph\(^5,6\). Ophthalmic dirofilarisis is transmitted to humans by common insect vectors like Anopheles, Culex and Aedes mosquitoes. The first case of human ocular dirofilaria was reported by Addario in 1885 from Milan, Italy\(^7\). Since Aedes index has risen upto 20 times over the years in Kerala, it is imperative to focus on the epidemiology of these infections.

Cases of human subcutaneous and ocular infection with D.Repens have been reported sporadically from France, Italy, Turkey, Africa, Thailand, USA and South East Asia.\(^8\) The species vary according to the geographical area with D.Tenuis being common in United States and D.Repens in Europe, Middle East and South East Asia. D. Repens is most frequently responsible for human dirofilarisis.\(^9\)

Symptoms vary in severity. In most cases the infections are asymptomatic or mild and uncomplicated, especially until the worm dies. Only after their death in situ painful inflammatory reactions occur around the worms causing subcutaneous nodular lesions, necessitating excision. During the migration of the worm through subcutaneous tissue inflammatory reactions may develop like mild fugitive swelling or subcutaneous nodule which can be painful and tender.\(^10\) These nodules occur preferably in areas not covered by clothes especially head.

The most common symptoms in ocular dirofilarisis are localized pruritus, pain, swelling, oedema, hyperemia of the conjunctiva, sensation of movement under the skin of the conjunctiva.\(^11\) Other ocular findings include:

1. Small subconjunctival granulomas containing D. Repens or D.Tenuis.
2. Corneal oedema caused by the organism in anterior chamber.
3. Scleral nodules caused by dirofilaria.
4. Lid oedema, signs of orbital inflammation, tenonitis or orbital pseudotumor.
5. Intense intraocular reaction, keratitis, vitreous opacities and secondary glaucoma caused by living intraocular filariae.
6. Retinal haemorrhages from vitreous parasites.
7. Unilateral RPE disturbances simulating retinitis pigmentosa from intraocular Dirofilaria etc.

However allergic reaction with fever, urticaria and facial oedema may occur.\(^11\) In majority of instances, parasites are found in excised nodule and tissue biopsy specimens. Less frequently they are removed from the tissues intact. Female worms are found more frequently than male.\(^10,11\)

Diagnosis is usually established with the surgical removal of the adult worm.\(^11\) Microfilaria have never been reported in humans.\(^12\) Eosinophilia occurs in less than 15 % cases with D. Immitis and rarely with D.Repens.\(^12\) In this case also reported blood smears were negative for microfilaria and there was no eosinophilia.

There is wide variation in the reported size of male and female worms in different part of the world. All dirofilaria have fine transverse striations on the cuticle and abundant somatic musculature. D.Repens is a nematode with a long thin filiform appearance. All except D.Immitis and few others have prominent external longitudinal ridges. Longitudinal ridges of D.Repens are broader and less distinct. They have rounded anterior end with buccal cavity. In contrast to the rounded short tail of female worm the male worms have a coiled tail.

Surgical removal of the worm not only establishes the diagnosis in most cases but presents a definitive cure. Oral therapy with DEC 2 mg / kg destroys other not yet visible worms despite the fact that human dirofilarisis is usually regarded as an infection by a single worm.\(^10\)

References:


In a lighter vein

Ad-va-nces & Ad-versities

Commercialisation of the medical profession has resulted in something called marketing creeping into our lives. We used to call it advertising in the past. Anywhere from internet to the backside of auto-rickshaws might carry ads for products and procedures; doctors and departments ad hoc omne.

Once upon a time, advertisements were taboo in the medical world. Those of us older than forty might remember the times when there were no huge hoardings proclaiming the merits of one hospital or larger than life size photographs of doctors holding ophthalmoscopes in their hand on the way-side. Nor got handed out bit notices advising you where one could get ones piles and anal fistulae treated. But the clever ones among us had ways and means to circumvent the word of old Hippocrates.

One veteran had boards put up by the roadside. They were innocent looking directional boards before junctions near his house showing which way to go to reach the railway station/ bus stand/ court. But the other fork of the road was marked with the name of the doctor.

Another belonging to an earlier generation had another trick. During the first show in the major theatres, immediately after the intermission a hand-written slide would be projected. It said ‘If Dr. So-and-so M.B.B.S, M.R.C.P, F.A.M.O.U.S. is in the theatre, please contact Such-and-such Hospital. There is an emergency case waiting’. But he got too smart for his own good and overplayed his hand. He did it once too often. And got found out.

Touting or canvassing was and is considered the lowest form of advertisement. Some hospitals do pay the referring doctor/ G.P. euphemistically calling it the referral fees. Some time back one among our community (let us call him Dr. X) raised it to the level of a fine art by recruiting auto-rickshaw drivers as touts. Passengers with red eyes or poor vision or talking about eye doctors were the targets.

One morning, the wife of Dr. Y, a colleague hired an auto-rickshaw from the railway station and asked him to go to the house of Dr. Y. “Why do you want to go to an inferior doctor when we have got some one like Dr. X in our town?”, the driver swung into action. “But I am Dr. Y’s wife” she said. “May be”, he was insistent, “but if you go to Dr. X once you will never go to any other doctor”.

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