

PERIORBITAL SUBCUTANEOUS DIROFILARIASIS-A REPORT FROM
COASTAL KARNATAKA

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Abstract

We report two rare cases of Periorbital subcutaneous Dirofilariasis from coastal Karnataka. Human ophthalmic dirofilariasis is an uncommon condition, but has worldwide distribution. Ophthalmic *Dirofilariasis* may present as periorbital, subconjunctival, orbital, or intraocular involvement. We report two cases of periorbital subcutaneous dirofilariasis with different clinical presentation, one with complete ptosis and the other with preseptal cellulitis. Both patients underwent excision biopsy of the subcutaneous nodule with complete recovery.

Keywords: *Dirofilaria*; Dirofilariasis; Periorbital; Coastal Karnataka

1. Introduction

Human dirofilariasis is a cosmopolitan zoonosis¹. The dirofilaria are natural parasites of mammals and are transmitted to man by zoonophilic mosquitoes. Though nearly forty species of dirofilaria have been identified, only a few have been reported to cause human infection (Boreham *et al*, 1997); the most common being *Dirofilaria immitis*, a parasite of dogs, *D. Tenuis* a parasite of raccoons, *D. repens*, a parasite of dogs and cats, and *D. ursi* a parasite of bears (Orihel and Eberhard, 1998). Of these species *D. repens*, *D. ursi*, *D. tenuis* and *D. striata* are found in the subcutaneous tissues; while *D. immitis* and *D. spectrum* are found in the heart and blood vessels of man¹. Cases of human subcutaneous and ocular infection with *D. repens* have been reported sporadically from France, Italy, Turkey, Africa, Thailand, USA and Southeast Asia². Reports of human dirofilariasis in India are very few^{2,3,4}.

2. Case Report-1

Patient of age 52, presented with swelling in the right supraorbital margin, temporal aspect since 27 days, drooping of eye lid since 25 days. These complaints were associated with fever with chills and rigors, cough with expectoration. The patient was administered antibiotics by a local physician. She was a Hypertensive, on medication since 5 years.

General and Systemic Examination of the patient was within normal limits. The best corrected visual acuity was 6/6. On Local examination, increased forehead creases and elevated eyebrows was present. In the temporal aspect of the right supraorbital margin, a round hard, smooth swelling with a diameter of 1cm was noticed. The patient had ptosis of right eye, with palpebral aperture 1mm, as compared to 10mm in the left eye. LPS action was 0mm in Rt eye & 18 mm in Lt eye MRD₁ was -4mm in the right eye, 5mm in the left eye. MRD₂ was 5mm in both eyes. Bell's

Phenomenon was normal. Marcus Gunn Jaw winking phenomenon was absent. Corneal sensations were normal in both eyes. Anterior segment findings, as well as fundus findings were normal in both eyes. Differential Diagnoses considered were dermoid and sebaceous cyst (Fig-1). The subcutaneous nodule was excised and sent for histopathological evaluation. Patient was treated with diethyl carmazine citrate tablet for 3 weeks. 3 months later ptosis corrected with a frontalis sling (Fig-2).

2.1 Histopathological report

Paraffin embedded sections from the nodular soft tissue mass sent, were stained with haematoxylin and eosin stain. Sections revealed dead parasite in fibrocollagenous tissue surrounded by dense infiltration by eosinophils, lymphocytes and histiocytes. Parasite had smooth cutical with prominent longitudinal ridges and a well developed muscular layer. The body cavity showed uterus and intestinal tube. The histological features were suggestive of *Dirofilaria repens* (Fig-3).

3. Case Report-2

A 34 yr old lady, presented with diffuse swelling below the right lower lid of 4 months duration. The patient gave history of similar swellings over the left foot, left knee, left hand and finally migrating in the region of right lower lid over a period of 2 years. On examination, the swelling was 3x2 cm in size, non-tender, firm in consistency, with skin over the swelling being normal. Ultrasonic scan showed a dead worm in the subcutaneous area (Fig-4). The lesion was excised under local anaesthesia and was sent for histopathology, which showed features consistent with *Dirofilaria immitis* (Fig-5).

3.1 Histopathological report

The surgical excised specimen was a nodular soft tissue mass measuring 3x2x1cms. Paraffin embedded sections were stained with hematoxylin and eosin stain, revealed longitudinal and cross sections of the parasite in fibro-fatty tissue showing dense infiltration by eosinophils,

lymphocytes, histiocytes and giant cell reaction. The parasites had smooth cutical, well developed muscular layer and the body cavity showed intestinal tube with gonads. The Histological features were suggestive of *Dirofilaria Immitis* (Fig-5).

4. Discussion

The genus *Dirofilaria* belongs to the family Onchocercidae, subfamily *Dirofilarinae* of the order Spirurida and Class Secernentea. Addario, in 1885, reported the first ever case of human Ocular *Dirofilaria* infection, from Milan, Italy. Humans are accidental hosts, being infected by the bite of *Anopheles*, *Culex* and *Aedes* mosquitoes carrying infective larvae, acquired from microfilaria-rich blood of infected mammals. However, in humans, microfilaria are not produced by the parasite, which dies before it can do so. After the parasite dies, there is inflammation around the worm, causing subcutaneous nodular lesions, for which excision becomes necessary. It is our speculation that, the LPS dysfunction was probably due to the inflammatory response.

Histopathological Observations of Case-1 revealed dead parasite in fibrocollagenous tissue surrounded by dense infiltration by eosinophils, lymphocytes and histiocytes. Parasite had smooth cutical with prominent longitudinal ridges and a well developed muscular layer. The body cavity showed uterus and intestinal tube. Histopathological Observations of Case-2 revealed longitudinal and cross sections of the parasite in fibro-fatty tissue showing dense infiltration by eosinophils, lymphocytes, histiocytes and giant cell reaction. The parasites had smooth cutical, well developed muscular layer and the body cavity showed intestinal tube with gonads.

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Fig-1: Differential Diagnoses of dermoid and sebaceous cyst.



Fig-2: Three months later ptosis corrected with a frontalis sling.

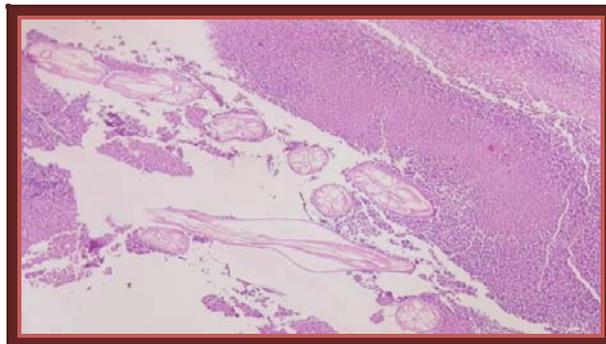


Fig-3: Histopathological features of subcutaneous nodule of dermoid and sebaceous cyst.



Fig-4: Non-tender swelling with a dead worm in the subcutaneous area.



Fig-5: Final result after the excision of Non-tender swelling with a dead worm in the subcutaneous area.

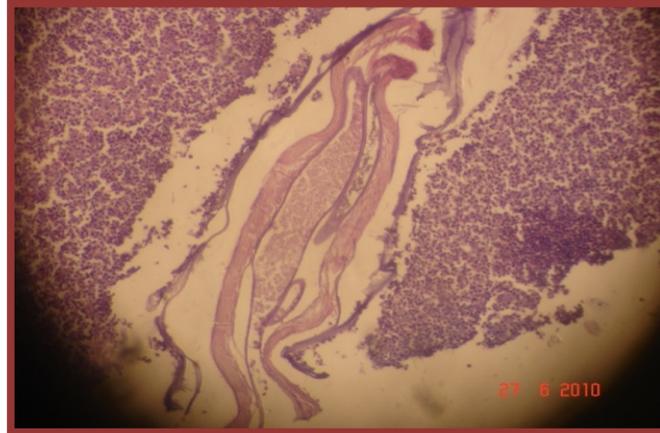


Fig-6: Histopathological features of *Dirofilaria Immitus* in the subcutaneous area.