Removal and identification of a subconjunctival parasite by light and scanning electron microscopy

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Abstract

Background: Ophthalmic dirofilariasis is an uncommon zoonotic parasitic infection caused by species of Dirofilaria, a dog tapeworm that is transmitted to human by mosquitoes. Man is a dead-end host for the parasite. Ophthalmic involvement is rare and includes periorbital, subconjunctival, subtenon, and intra-ocular involvement. We report the removal of a subconjunctival worm and identification by light microscopy (LM) and scanning electron microscopy (SEM). **Purpose**: A 62-year-old female presented with complaints of redness, discharge, and foreign body sensation with difficulty in opening eyes in the left eye for the last 3 days. The patient is a non-vegetarian. On examination, her best corrected visual acuity in both eyes was 20/20. On slit lamp examination, there was a long, thin, round, coiled white subconjunctival live worm in the left eye superiorly. The rest of anterior segment evaluation, intra-ocular pressure, and fundus was normal in both eyes. The parasite was removed under local anesthesia from subconjunctival space [Video]. External surface morphology under LM revealed fine transverse cuticular striations with tapered cephalic and caudal ends. Uterus was long and coiled with indistinguishable masses inside. The finding was also confirmed by SEM. **Synopsis:** A subconjuctival parasite was removed and identified as Dirofilaria repens by characteristic LM and SEM findings. **Highlight:** Dirofilaria species may lodge in many tissues of human bodies including eye and adnexa. Dirofilaria is a natural parasite of carnivorous animals, mostly dogs, cats, and foxes.[1] The most common mode of transmission to human is usually by bite of mosquitoes like Culex and Aedes, which are considered as vectors, and it is often thought that parasitemia is because of accidental conduction.[1] Simple surgical removal of the worm is curative. After removal, the worm should be visualized directly under LM. All the internal structures of the transparent worm could be seen and compared with those under SEM.

Video Link: https://youtu.be/XJb90ZHCX-I

Key words: Dirofilaria repens, light microscopy, scanning electron microscopy, subconjunctival dirofilariasis

Reference

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