

# *Onchocerca lupi*

## Veterinarians: Have You Seen a Case?

*Onchocerca lupi* is a newly recognized parasite in Los Angeles County

### What is it?

*Onchocerca lupi* is a parasite that can infect dogs, cats, and humans. It is related to the parasite *Onchocerca volvulus* which causes River Blindness in people in Africa and Central and South America. The mode of transmission of *O. lupi* is unknown, but it may be spread by the bite of black flies. This parasite has been found in 7 dogs in Los Angeles County in the past several years. It is unknown if the incidence is increasing, but the condition has not been systematically tracked.

### What are the symptoms in dogs and cats?

Worldwide, there are 2 cats and many dogs with confirmed *O. lupi* infections, found in southern California, Utah, Nevada, New Mexico, Oklahoma, Greece, Hungary, and Portugal. Most cases involved 0.5-2.5 cm masses containing worms found anywhere around the eyeball, including in the conjunctiva or behind the eye. The masses can be painless, or may cause redness and inflammation. Glaucoma and keratitis can occur. Surgical removal of the masses appears to cure most cases, but enucleation is sometimes required. Most cases had unilateral lesions, but bilateral involvement has been seen in 3 cases. Diagnosis is by histologic and molecular analysis of worms after surgical removal of the masses.

### What are the symptoms in humans?

Worldwide, there are 5 published human cases of infection with *O. lupi*, in Turkey, Tunisia, and Arizona. Four cases had worms embedded in solitary subconjunctival masses, varying in size from 5mm-12mm, with minimal inflammatory reaction. The fifth case involved a worm inside a mass in the cervical spinal canal of a 22-month-old child in Arizona. In all cases, surgical removal resolved the problem, and diagnosis was by histologic and molecular analysis of the worms.

### What should I do?

- **Report animal cases and seek consultation** (see box).
- **Advise people and pets to avoid black flies.** Black flies are about 1/8-inch to 1/4-inch in size. They inflict a painful bite that sometimes bleeds, and are active during the day. They breed in fast-moving water, as found in streams and decorative fountains. Staying indoors when black flies are biting is protective. Mosquito repellents containing DEET have some efficacy against black flies.
- **Consider Heartworm Preventative Medication.** Although not proven, ivermectin may prevent the spread of *O. lupi* in pets based on its use in people infected with *O. volvulus*. In humans, ivermectin kills microfilariae, preventing black flies from getting infected if they bite the infected person.



Infected right eye of an LA County dog. Lesions included generalized friable conjunctival inflammation, corneal degeneration, and elevated intraocular pressure of 31 mmHg. The condition was refractory to antibiotics, steroids, and other treatments. Eventually enucleation was performed, and histopathologic exam of tissue confirmed infection with *Onchocerca lupi*.  
(Photo: Dr. Bruce Silverman, 2004)

### Report Cases and Seek Consultation

#### Report Animal Cases

**Phone**  
(213) 989-7060

**FAX**  
Download  
Animal Disease Report Form at  
[www.publichealth.lacounty.gov/vet/forms.htm](http://www.publichealth.lacounty.gov/vet/forms.htm)  
Complete the form and  
fax to (213) 481-2375

**Online**  
[www.publichealth.lacounty.gov/vet/disintro.htm](http://www.publichealth.lacounty.gov/vet/disintro.htm)

#### Seek Consultation

Contact the Veterinarian-on-Duty  
Mon-Fri 8am-5pm  
(213) 989-7060  
[vet@ph.lacounty.gov](mailto:vet@ph.lacounty.gov)