

# Encephalitozoon cuniculi–associated Phacoclastic Uveitis in a Dwarf Rabbit

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## Case Presentation

A 1-year-old female dwarf rabbit presented for an eye lesion of 2 months' duration. The referring veterinarian had prescribed a course of topical and systemic antibiotics, with no change. The rabbit appeared unaffected by the eye problem, and the physical examination was otherwise unremarkable. The lesion appeared as a whitish-yellow mass protruding into the anterior chamber over the iris of the right eye (FIGURE 1). Vision appeared unaffected, and fluorescein staining was negative for corneal lesions.

The patient history and appearance of the lesion were compatible with *Encephalitozoon cuniculi*–induced phacoclastic uveitis, and a tentative diagnosis was made. Other diagnostic differentials included granuloma caused by *Pasteurella* or other bacterial infection. Diagnostic recommendations included a complete blood count (CBC), a serum biochemical profile, and serology (ELISA) testing for *E. cuniculi*.

The CBC and biochemical profile were within normal limits, and the *E. cuniculi* serology titer was high positive at 2.4 (high positive range, 2.0 to 2.8). The owners opted for medical management. Treatment was begun with fenbendazole at 20 mg/kg PO q24h for 28 days. Prednisolone acetate ophthalmic suspension was prescribed to treat the uveitis, as recommended by a consulting ophthalmologist.

At a 1-month recheck, the lesion had not changed and the rabbit was doing well. Surgery might be necessary in the future depending on progression of the lesion, discomfort, and long-term effects on the eye.

## Discussion

*E. cuniculi* is an obligate intracellular protozoal parasite that is shed in urine of infected rabbits. Most of the time, these organisms do not cause any obvious clinical disease. When *E. cuniculi* reach nerve tissue, rabbits can experience neurologic impairment, characterized by partial or complete paralysis, loss of coordination, seizures, and head tilting. *E. cuniculi*–associated phacoclastic uveitis is a recognized disease in rabbits, particularly dwarf rabbits. There is no sex predilection, and the condition is often seen in younger

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Figure 1. Classic presentation of *E. cuniculi*–associated phacoclastic uveitis in rabbits. Note the large mass protruding into the anterior chamber.

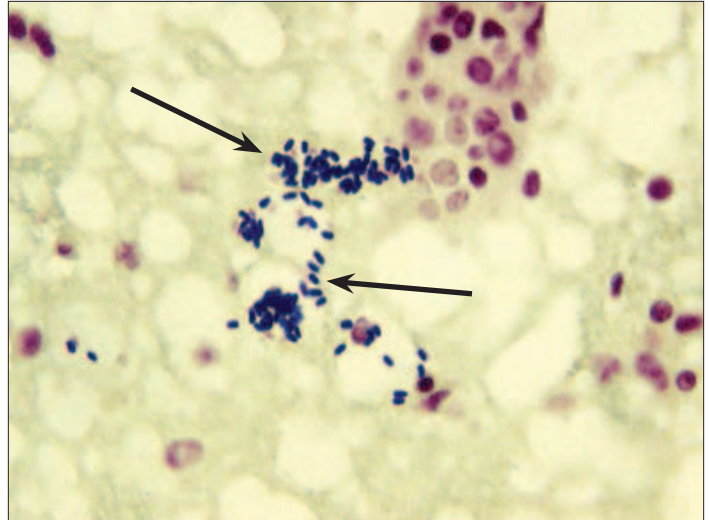
rabbits. The lesion occurs after rupture of the lens capsule releases lens protein into the anterior chamber, which results in granulomatous uveitis; however, the posterior chamber (behind the lens) usually remains unaffected. The mass originates at the lens capsule, and the inflammation is centered on the break in the capsule. *E. cuniculi* has zoonotic potential in people who are severely immunosuppressed.

Historically, serum ELISA antibody titers were helpful in making a diagnosis; however, serology only indicates past exposure and is not diagnostic of or necessarily correlated with clinical disease and infection. Improved screening can now be accomplished through immunofluorescence assay and polymerase chain reaction (PCR) testing of tissue, urine, and feces samples, as well as cerebrospinal fluid and removed lens material. These tests look for antigens, unlike serology, which tests for antibodies. Simultaneous testing of IgG- and IgM-specific antibodies can give an indication of infection status because IgM antibodies indicate active infection. Changes

consistent with infection may also be seen in plasma or serum protein electrophoresis test results. PCR testing should be conducted on lens material in cases of enucleation. Histologic demonstration of organisms gives a definitive diagnosis if samples are obtained at necropsy (**FIGURE 2**).

Treatment options include antiprotozoal medication and topical corticosteroids, surgery to remove the affected lens and granuloma, or complete enucleation of the eye. Enucleation is not common. In most cases, the eye is functional, and enucleation is unlikely to eradicate the infection. In some cases, the eye may atrophy without surgical intervention (phthisis bulbi). If the lesion is mild, long-term oral antiprotozoal medication may be effective in preventing progression. In most cases—as in this one—owners opt for medical management to see how the eye progresses.

Oral antiprotozoal medication is always recommended, as affected rabbits may develop infection in the brain that can lead to encephalitis. *E. cuniculi*–associated phacoclastic uveitis should be in the differential diagnosis for rabbits presenting with ocular lesions and uveitis.



**Figure 2.** Histologic demonstration of *E. cuniculi* organisms (arrows) in brain tissue obtained at necropsy from a different rabbit. (Ziehl-Neelsen, 50×)