

# Watch for LCMV Eye Disease in Little Children

*Patients should not get hamsters for their 4-year-olds if they plan to have other children, an expert says.*

BY DOUG BRUNK  
San Diego Bureau

TUCSON, ARIZ. — Although only 49 cases of lymphocytic choriomeningitis virus have been reported in the medical literature worldwide, Dr. Marilyn Baird Mets has a hunch that the prevalence could be much higher.

Since 1997, she has seen seven children with the condition present to Children's Memorial Hospital, Chicago, where she is head of ophthalmology. Three other clinicians have called her with reports of positive cases: one from the western suburbs of Chicago, one from Los Angeles, and one from Fort Collins, Colo.

"This virus is out there," Dr. Mets said at the annual meeting of the Teratology Society.

"Obstetricians should be telling their patients not to work around rats in medical labs during their pregnancy [and] not to get a hamster for their 4-year-old if they're going to have other children. It's a preventable disease, but people need to know about it," she said.

Discovered in 1933 and classified in the 1960s as a prototype for the arena virus, lymphocytic choriomeningitis virus (LCMV) is harbored in mice and transferred vertically by uterine infection.

"There is documented infection to humans from wild mice, lab mice, rats, and hamsters," said Dr. Mets, also professor of ophthalmology and surgery at Northwestern University, Chicago.

"Transmission is thought to be airborne or contamination of food by infected mouse urine," she said. "There has also

been experimental transmission demonstrated by ticks, fleas, mosquitos, and bed-bugs."

About one-third of adults who acquire LCMV are asymptomatic. Of the remaining two-thirds, about half have central nervous system disease. Illness occurs in a biphasic pattern. "First, there's an acute febrile illness with myalgias and headache," she said. "Later on, meningeal signs may develop, and rarely encephalitis, myocarditis, parotitis, orchitis, and pneumonia. Very rarely, fatal systemic disease is reported." It's the causative agent in about 10%

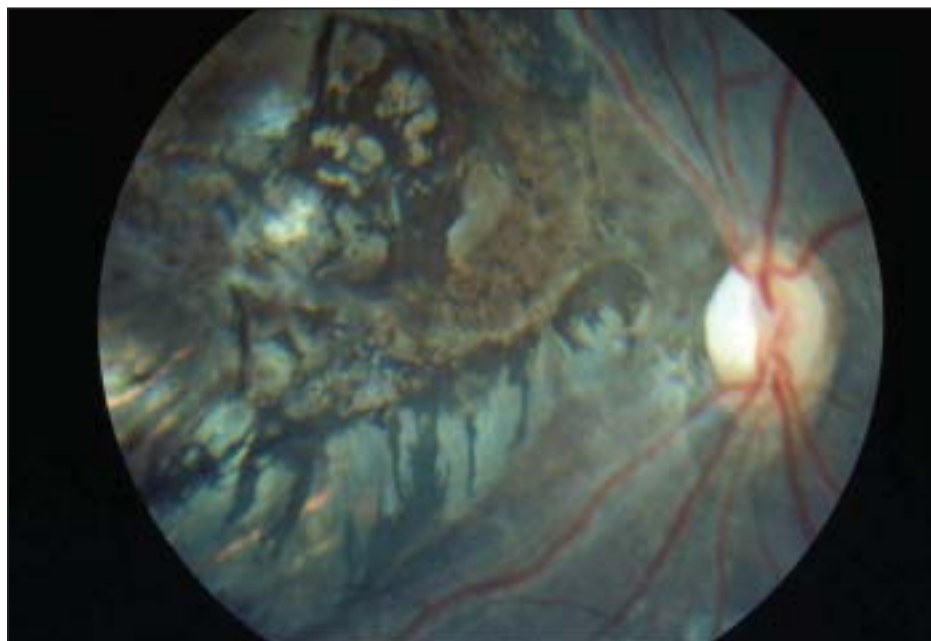
DR. METS

of aseptic meningitis cases.

LCMV was first described as a fetal pathogen in Great Britain in 1955. The first case of congenital LCMV in the United States was reported in 1993. The baby was born with a birth weight of 2,898 grams. During pregnancy the mother lived in a well-maintained inner-city apartment. At 5 months' gestation, she had a febrile illness that lasted a week. The child was born with hydrocephalus and microphthalmos of the right eye. The right eye had leukocoria, a cloudy vitreous, and exudative retinitis.

A review of 26 infants with LCMV published in 1997 revealed that 88% had chorioretinopathy, 45% had hydrocephalus, and 13% had microcephaly.

Diagnosis is made by IgG indirect fluorescent antibody, which is commercially available. "Or you can get an IgG ELISA at the [Centers for Disease Control and Prevention]," Dr. Mets said. The differential diagnosis includes toxoplasmosis, rubella, cytomegalovirus, herpes simplex virus, enteroviruses, syphilis, parvovirus B19, and West Nile virus. ■



An optical scan shows that the retinal pigment of the epithelium has been dramatically disturbed in the eye of a 22-month-old child with congenital LCMV.

# New Tickborne Ehrlichia Species Emerges, Hits U.S.

BY JOHN R. BELL  
Associate Editor

SAN ANTONIO — Physicians who see patients presenting with extreme localized pain beginning a few days after a tick bite have a new reason to consider the possibility of ehrlichiosis, based on findings reported at a meeting of the Southwest Conference on Diseases in Nature Transmissible to Man.

Researchers from the Centers for Disease Control and Prevention have discovered a possible new *Ehrlichia* species found to cause illness in humans, as well as goats.

The vector for the disease is the domestic Lone Star tick.

Amanda Loftis, D.V.M., of the CDC's medical entomology laboratory in Atlanta, reported a human case that she said could be a "divergent strain" of the bacterium *Ehrlichia ruminantium*, which is on the U.S. Department of Agriculture's watch list of foreign pathogens, or a new *Ehrlichia* species.

Dr. Loftis said the new bacterium is genetically similar to *E. ruminantium*, which is considered common in Africa and the Caribbean but so far unreported in the United States.

The new agent causes only mild illness in humans and animals, unlike *E. ruminantium*, which causes heartwater disease.

Five days after removing a tick from his upper arm, the patient, an Atlanta man, experienced extreme neck pain that was unresponsive to NSAIDs. He pre-

sented to a physician 4 weeks after removing the tick.

The physician suspected tickborne illness, took a blood sample, and administered doxycycline; the patient reported significant improvement in neck pain after 48-60 hours, Dr. Loftis said.

Dr. Loftis and her colleagues first discovered the new agent when they tested

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local ticks on a laboratory goat that subsequently became mildly ill. Genetic tests for five genes showed that the agent infecting the goat was highly similar to *E. ruminantium* but not identical to any described strains.

Furthermore, the CDC performed DNA tests on the patient's blood and found *Ehrlichia* DNA identical to sequences found in the goat and in wild Lone Star ticks.

No other bacterial DNA were detected, Dr. Loftis reported at the meeting, held in conjunction with the International Conference on Diseases in Nature Communicable to Man.

"Nothing like this has ever been reported from the United States," Dr. Loftis said.

"The scary thing is that the Hartsfield International Airport, a U.S.D.A. port of entry for import of animals, is very close to our collection site. Both are within the Atlanta metro area—so we have to ask the question, where did this come from?" she said.

There are 13 species of tick that can be vectors of *E. ruminantium*, but only 3 of these species live in the United States, she noted. ■

# Salmonella Infections Are Traced To Classroom Snake's Feed Mice

BY JOHN R. BELL  
Associate Editor

SAN ANTONIO — Salmonella infections that simultaneously occurred in four children at a Michigan elementary school were traced to mice that had been shipped to the school from a business in Texas as food for a classroom pet snake, according to a researcher with the Texas Department of State Health Services.

The incident was detailed in a poster presented by Carol M. Davis, Ph.D., at the Southwest Conference on Diseases in Nature Transmissible to Man.

The initial cases were reported to the Centers for Disease Control and Prevention, Atlanta, and the results of pulsed-field gel electrophoresis tests were entered into a CDC database called PulseNet.

Using PulseNet, the state of Minnesota discovered that recent human

cases in that state were enzymatically similar to those from the Michigan children. An investigation determined that three Salmonella-positive mice shipped by the business were the likely vector.

Dr. Davis and colleagues then conducted an inspection of the breeding facility, a small operation that showed signs of lax sanitation.

Samples of rodent feed, rodent feces, and the rodents themselves were positive for salmonella. The business was subsequently brought into compliance by Texas authorities.

A total of 12 human salmonella cases were linked to the mouse-breeding business.

Dr. Davis and her coinvestigators said that individuals should be more vigilant about washing their hands after they handle rodents and pet reptiles, and the investigators also recommended better warning labels on the packaging of food rodents. ■