



Bat rabies after undetected exposure: implications for prophylaxis

The US Centers for Disease Control and Prevention (CDC) recently reported fatal bat rabies in 2 people who had no recollection of being bitten by a bat.¹ The CDC now recommends that physicians consider rabies postexposure prophylaxis for all patients who have had or are likely to have had any contact with a bat.

The cases

In the first case, a 42-year-old woman presented to the emergency department of a Kentucky hospital with dizziness, shoulder pain and dysphagia. She was treated for pharyngitis and discharged. She returned later that day and was admitted; she experienced gagging and vomiting, worsening dysphagia, pain in the right arm, anxiety and agitation. She was transferred to another hospital on day 2. The dysphagia continued and the patient experienced involuntary movements of the upper extremities, neck, face and eyes. Acyclovir therapy was started on the presumption of viral encephalitis. The patient was intubated the next evening because of progressive bulbar dysfunction. On day 4 she was transferred to a third hospital, where she was mechanically ventilated and treated for shock. Chest radiography showed bilateral infiltrates; broad-spectrum antibiotic therapy was started. CT of the brain showed extensive diffuse cerebral edema. Neurologic function continued to decline; on day 18 life support was withdrawn and the patient died. A serum specimen collected on day 13 tested positive for rabies antibody; serum collected on day 4 tested negative. Rabies virus nucleic acid was detected in vitreous humour obtained at autopsy; nucleotide sequence analysis implicated the variant associated with the silver-haired bat (*Lasiurus noctivagans*).

The patient and her husband recalled no animal bites or contact with bats or other animals. No evidence of bats was found in their house. Rabies postexposure prophylaxis was administered to 5 family members and 82 health care workers because of possible exposure to the patient's saliva.

The second case involved a 49-year-old man who pre-

sented to the emergency department of a Montana hospital with fever, sore throat, productive cough and right-sided sinus pain of several weeks' duration. He was treated for sinusitis and discharged. He returned on day 6 and was admitted for evaluation of confusion, ataxia, fever, cough and sinus pressure. Results of neurologic examination and CT of the brain were normal. Chest radiography showed bilateral infiltrates and a left pleural effusion. Abnormal laboratory results included a white blood cell count of $17.5 \times 10^9/L$. The patient was treated for pneumonia and severe hyponatremia. On day 7 he exhibited ataxia, diminished deep pain reflexes and decreased sensation in the right hand; severe hypercapnia necessitated intubation. On day 11 the patient became comatose; acyclovir therapy was started on the presumption of viral encephalitis. Rabies was suspected on day 14; serum, saliva and nuchal skin biopsy specimens were submitted for testing. Two days later the patient died. Nucleotide sequence analysis of rabies virus nucleic acid detected in the nuchal specimen implicated the variant associated with the silver-haired bat.

The patient and his family reported occasionally seeing bats outside their rural home but recalled no physical contact with them. Rabies postexposure prophylaxis was administered to 3 family members and to 23 health care workers.

Implications

These cases are instructive. In the US, 17 (53%) of the 32 cases of human rabies cases reported since 1980 have been caused by variants of bat rabies virus. A definite history of bite was documented in only 1 of these 17 cases. This suggests that limited or seemingly insignificant physical contact with rabid bats may result in transmission. The CDC therefore now recommends that postexposure prophylaxis be administered in all situations in which there is a reasonable likelihood that contact with a bat has occurred. This would include cases in which a bat is found in the same room as a sleeping person, an unattended child or a mentally disabled or intoxicated person. — JH, AMT

Reference

1. Human rabies — Kentucky and Montana, 1996. *MMWR* 1997;46:397-400.