New virus emerges in Malaysia

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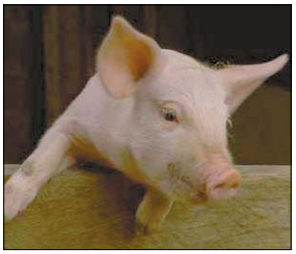
On Mar. 7, 1999, a 49-year-old pig farmer in Malaysia developed fever, headache, behavioural changes, blurred vision and lethargy. On admission complete blood count, electrolyte levels and a CT scan of the head were normal. Over the following days he deteriorated rapidly, with generalized seizures, respiratory failure, unstable blood pressure and high spiking fevers. He died 6 days after the onset of symptoms. On the day of his death, lumbar puncture revealed a high protein level (2.09 g/L). His brother, a worker on the same pig farm, had died a few days earlier from encephalitis.[1]



Between Sept. 29, 1998, and Apr. 4, 1999, 229 cases of febrile encephalitis were reported in Malaysia. Patients typically presented with a 3- to 14-day history of fever and severe headache, followed by drowsiness and disorientation often progressing to coma within 24 to 48 hours. Almost half of those affected died. Three clusters of cases, primarily adult men reporting close contact with swine, have been identified. Respiratory and neurologic symptoms and death among swine from the same regions occurred concurrently. In Singapore in March, 9 similar cases, 1 of which was fatal, and 2 cases of respiratory illness occurred among abattoir workers who had handled swine imported from Malaysia.[1]

Although Japanese encephalitis virus was suspected at first, tissue culture from central nervous system specimens has identified the presence of an agent never previously described. Electron microscopic studies and preliminary nucleotide sequencing indicate that the agent is a virus similar but not identical to another relatively new entity, the Hendra virus. Hendra-virus IgM antibodies were identified in the serum of 23 of 26 cases, and Hendra-like antigens have been detected in tissue specimens from affected swine.[1]

Hendra virus was first recognized in September 1994 in the wake of an outbreak of respiratory illness in 20 horses and 2 humans in Hendra, Queensland, Australia. One man and 14 horses died.[2] An outbreak in Mackay, Queensland, in August 1994 was later shown to be due to the same virus.[3]

Although some investigators recommend classifying the Hendra virus in a new genus, most have described it as an equine morbillivirus within the family Paramyxoviridae.[2,4] Other morbilliviruses include human measles virus and a variety of viruses pathogenic in animals, including rinderpest, canine distemper and peste des petits ruminants viruses.[2] In horses, cats, guinea-pigs and humans, the Hendra virus has been shown to cause vascular lesions in the lungs and other tissues.[5–7] Fruit bats of the species *Pteropus poliocephalus* are believed to be the natural hosts.[5,8] Although transmission between species can occur, the virus is not highly contagious, and transmission from horses to humans through exposure to infected blood or bodily fluids is rare.[5]

A variety of new morbilliviruses have emerged in recent years. Beginning in the late 1980s investigators identified new morbilliviruses occurring in marine mammals.[3] A recent report has implicated yet another novel morbillivirus transmitted by bats in the increased incidence of stillbirths and deformities among piglets in New South Wales, Australia.[9]

Preliminary investigations suggest that spread of the new Hendra-like virus in Malaysia occurred through transport of infected swine.[1] Although the presumed wildlife reservoir and modes of transmission of the virus have yet to be determined, close contact with pigs seems to be necessary for human infection. No cases have been reported among unexposed family members or health care workers caring for ill patients. To prevent further spread, transportation of pigs within Malaysia has been banned, and all people in affected areas who are in close contact with pigs have been advised to use protective clothing and equipment. Although travel restrictions have not been imposed, visitors to Malaysia should be aware of the outbreak.[1]

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