Rabbit Virus = Human Concern

Rabbit hemorrhagic disease virus (RHDV), a calicivirus, is characterized by hemorrhagic lesions, mainly in the liver and lungs. Like the human norovirus, RHDV binds to histo-blood group antigens (HBGAs), which are expressed on epithelial surfaces and serve as attachment factors (ligands). Because phylogenetic conservation of receptors can be a major risk for cross-species transmission, a study analyzed the ability of RHDV strains to recognize human HBGAs. Binding capacity of 6 RHDV strains against human saliva samples from ABH secretors, which secrete antigens in body fluids according to their blood groups (A, B, or O), was tested. Human saliva samples were recognized by 5 of 6 RHDV strains. Only the RHDV antigenic variant G6 did not show binding to saliva. Strains G1 and G2 showed preferential binding to saliva from B over O secretors; A secretors were poorly recognized. The G3 strain showed better recognition of A secretor saliva. The G4 and G5 strains showed preference for A secretors over B and O secretors, indicating a shift in specificity toward recognition of the A antigen. No RHDV strains recognized non-secretor saliva. To determine if human epithelial cells were recognized by RHDV, binding of the G3 strain to human tissue sections was assessed using tracheal, lung, and gastroduodenal junction samples. Binding to epithelial cells of stomach or trachea of secretors was noted, but not to those of nonsecretors. The findings indicated that attachment factors for RHDV are present on human cells.

Commentary
This study emphasized another compelling reason for collaborative medicine and recognition of the pathogen plasticity. Of particular concern was the recognition of RHDV attachment factors on human epithelial cells, chiefly those that might mimic the point of viral entry. This suggested that RHDV, a disease of extraordinarily high mortality, could affect humans if its host range is more expansive than originally thought. Implications for widespread epidemics and microbial bioterrorism are staggering.—Indu Mani, DVM, DSc

Source

Managing Reherniation of Disk Material

Surgical decompression is common for thoracolumbar (TL) intervertebral disk extrusion (IVDE) in dogs. This retrospective study was conducted to determine findings and outcomes of dogs with reherniation of nuclear material within 7 days of hemilaminectomy for acute TL IVDE. Eleven chondrodystrophic dogs with acute neurologic decline within 1 week of surgical decompression were identified. Extradural spinal cord compression compatible with extruded disk material was identified at the previous hemilaminectomy site via CT or myelography. A second decompression surgery was performed on 10 dogs; these dogs improved neurologically within 24 hours and were paraparetic at discharge. One dog did not have decompression surgery; examination 185 days later showed it had not regained deep nociception.

Reherniation of disk material is one potential cause of neurologic decline in the early postoperative period of dogs surgically treated for TL IVDE. Postoperative imaging can document adequate decompression and removal of extruded nuclear material after hemilaminectomy. Advanced vertebral column imaging should be considered with signs of early postoperative neurologic decline.

Commentary
Although it has become routine to advise owners of the potential for sign recurrence after surgery for intervertebral disk herniation, the possibility for a second surgery within 7 days typically is not addressed. This should be explained, as the added expense and emotional stress may be unavoidable; however, forewarning may reduce frustration. Although apparent risk is low, extrusion of further disk material into the canal requires immediate surgery and is not usually the fault of the initial surgeon. We must continue to advise strict cage confinement after surgery to prevent this complication.—Simon Platt, BVM&S, MRCVS, DACVIM (Neurology), DECYN

Source