Vaccines & Distemper Virus

It has previously been reported that certain strains of attenuated live canine distemper vaccine have been rarely associated with postvaccinal distemper in a few reports. In this case study, 2 dogs developed distemper encephalitis after receiving a modified live distemper vaccine. The border collie mix dogs were littermates that lived with different families. In the first case, the male developed encephalitis 5 days after receiving its booster vaccinations at 4.5 months of age. In the second case, the female—which had received its puppy series the prior year—developed encephalitis 27 days after receiving an annual booster vaccine at the age of 16 months. The younger dog was presented with aggression and seizures, and the older dog was presented with dropped jaw and hypersalivation that swiftly progressed to stupor. Both were euthanized within days of presentation. Epidemiological features of these cases and immunohistochemistry performed on brain tissue from both dogs suggested the encephalitis was caused by the vaccine rather than by natural exposure. A congenital defect suppressing the immune system was proposed as the cause of disease development. It is not believed that the vaccine virus became virulent; the dogs received vaccines from different manufacturers, and neither vaccine had any other reported cases of distemper.

Commentary
Encephalitis associated with modified live virus vaccines is rare but has been reported in dogs, ferrets, minks, and several other species. In this report, distemper was confirmed with typical histopathological lesions and immunohistochemistry. However, PCR testing, which can help distinguish vaccine strains from field strains of distemper virus, was not performed. Because 2 littermates were affected, a congenital immunodeficiency may have been present. Vaccination should be avoided in animals during illness or if immune-mediated diseases are present, but in this case both dogs were apparently healthy so the complication could not have been foreseen.—Craig Datz, DVM, MS, DABVP, DACVN

Source