Veterinary pathologists increasingly receive suspected animal abuse and neglect (AAN) cases. Questions asked by courts in AAN cases often differ from those asked in routine diagnostic cases, making modification of postmortem procedures and reports advisable. This article reviewed fundamental veterinary forensic pathology (VFP) principles, its application to companion AAN cases, forensic necropsy components, and specific necropsy goals in cases of blunt-force trauma, projectile wounds, and starvation. It also touched on future directions in this specialty.

VFP, though similar to other pathology work, has important differences. While VFP is often adapted from the human field, there are areas where the 2 do not overlap. Veterinary pathologists should be familiar with questions they may be asked and anticipate the needs of the legal system. The importance of the “scene” is a unique VFP aspect. The body is evidence in these cases; thus, forethought is needed regarding ancillary tests (ie, ballistics, entomology, accelerant testing, DNA testing) and sampling. The main questions to be investigated in VFP involve cause, mechanism, manner of death, time and duration, and injury vitality (ie, whether injuries occurred ante- or postmortem). Important components of the forensic necropsy include background information, radiography, photography, external examination, and histology.

Commentary
Determining time of death is a constantly evolving research area. Potentially pertinent information may be gleaned from some human research based on animal models such as decomposition scoring. Veterinary forensic pathologists should strongly consider documenting and developing a database of known decomposition findings associated with known environmental conditions in their area based on all necropsies performed, not just forensic necropsies. This database could become the basis for all future postmortem interval estimations.—Melinda D. Merck, DVM

Source


Being Skunked Does More than Stink
In addition to other anecdotal reports, two cases of Heinz body anemia (1 in a captive red panda and 1 in a dog) were seen after the animal had been sprayed by a skunk. However, a direct cause-and-effect relationship has never been determined. This study aimed to determine if skunk musk induces oxidative damage in vitro.

Plasma and RBCs from heparinized blood of 3 dogs, 3 cats, and a red panda were incubated with solubilized skunk musk and assessed for Heinz body and methemoglobin formation. The samples were assessed for oxidative damage by visual inspection, optical absorbance spectroscopy, transmission electron microscopy, and light microscopy. There were time and dose-dependent increases in the number of Heinz bodies per RBC and the number of RBCs that contained Heinz bodies; these were present by 4 hours and numerous by 24 hours. In addition, dose-dependent brown discoloration and absorption changes seen with methemoglobin were present at 4 hours and increased over 24 hours in the red panda samples and 72 hours in the dog and the cat samples. Eccentrocytes and pyknocyttes, seen with erythrocyte membrane damage and formed from some of the same oxidants, were not seen in this study. The incidence of oxidative injury characterized by Heinz body formation and methemoglobin formation supports a causative association between Heinz body hemolytic anemia and skunk spray exposure; further studies are necessary to elucidate in vivo mechanisms and the dose of spray required to cause it.

Commentary
I read the JAVMA case report1 a number of years ago with some interest, but this study gave compelling evidence that skunk musk may indeed cause a life-threatening hemolytic anemia. This is information I can take to the clinic floor and will make me more vigilant about client education and follow-up for skunked pets, particularly cats. This awareness may result in additional case reports and information on epidemiology and effective treatments. Immediate and thorough bathing may also be indicated.—Elke Rudloff, DVM, DACVECC

Source