

The Hazard of Alliums: When onions, leeks and garlic go bad

History

A young male Fox Terrier “Pax”^a was presented to his veterinarian because of lethargy and anorexia of two days duration. On examination he was very quiet and had pale mucous membranes.

Samples submitted to the laboratory

Pax’s biochemistry had minimal changes, except for a slight increase in bilirubin.

His haemogram, however, showed many abnormalities including a marked anaemia with a moderate to strongly regenerative response and the presence of numerous Heinz bodies and eccentrocytes. A moderate left shift with band neutrophilia and toxic change were also present.

Diagnosis

A diagnosis of Heinz body anaemia was made and on questioning Pax’s owner it was found that he had been eating leek-onion-potato mash for the previous week. His haematocrit continued to fall (0.14 L/L RI: 0.35-0.55) before his diet was changed at which point it began to rise without further treatment.

Comment

Cooked and uncooked onions, garlic, leeks, chives and powders made from allium species contain compounds that cause oxidative damage to red blood cell components which may result in cell destruction. Oxidative damage to the iron moiety, haemoglobin molecule or RBC membrane results in methaemoglobin, Heinz body (Figure A) or eccentrocyte (Figure B) formation, respectively. The type and amount of allium ingested determines whether anaemia occurs. In some cases, no clinical signs are seen; in other cases weakness, rapid breathing, staggering and collapse can develop. Cats are more sensitive to these foods but toxicity in dogs is more common, presumably because they are less discriminate in their eating habits.

Treatment depends upon the severity of the anaemia and overall patient compromise. Oxygen therapy, fluid administration or red blood cell transfusion may be necessary to turn the patient around.

^a: a pseudonym to protect Pax’s true identity



