AN OWNER'S GUIDE FOR TREATMENT OF TICK POISONING

CAUSE

Tick poisoning is caused by the adult-stage, and occasionally nymph-stage, of the paralysis tick (*Ixodes holocyclus*). The natural hosts for this tick are out native fauna, especially possums and bandicoots. When a paralysis tick attaches to a dog or a cat it ingests blood, and also secretes a toxin into the animal, which causes tick poisoning. Paralysis ticks are more commonly found in the warmer months (spring and summer) but can be seen year round.

SIGNS OF TICK POISONING

The clinical signs of tick poisoning usually occur around 3-4 days after tick attachment.

The signs can be variable but the most common changes include:

- A change in voice (bark/meow becomes hoarse)
- Vomiting/regurgitating, or refusing food
- Weakness in the back legs, which may progress to collapse
- Breathing problems eg they may have a loud pant, or have slow laboured breathing

These signs are caused by the tick toxin attaching to the nerve endings in muscles (neuromuscular junctions) leading to progressive weakness and paralysis. For up to 36 hours after a tick has been physically removed from your pet, the toxin remains in the blood stream and will continue to attach to the nerve endings and cause paralysis. For this reason, tick anti-toxin needs to be administered as soon as possible.

TREATMENT OF TICK POISONING

If your pet is showing any of these signs, they require treatment.

Treatment of animals with tick poisoning includes:

- Removal of tick/s and repeated searches for other ticks (long-haired or tick-coated animals may require full body clipping)
- Administration of tick anti-toxin
- Cage rest and close monitoring especially of respiration (breathing), mobility, bladder function and the swallowing reflex

- Food and water is removed for a minimum of 24 hours (in many cases, pets require intravenous fluid therapy to maintain hydration)
- Application of topical tick adulticide (tick rinse or Frontline spray)
- Administration of a sedative is also often necessary to reduce anxiety and to help with breathing

Tick anti-toxin is given to prevent further attachment of tick toxin to the nerve endings. It is not an antidote, so an immediate reversal of clinical signs does not occur. Some animals with tick poisoning will worsen before they improve, however the overall survival rate for animals with tick poisoning is 95%.

What is important to remember is that the anti-toxin can only neutralise the toxin that is unbound. Once the toxin binds to the specific site in the muscles, anti-toxin **cannot** neutralise it, no matter how much anti-toxin is given. The essential requirement is for the animal with a paralysis tick to have the tick removed and treatment commenced as soon as possible.

Severely affected animals will require additional supportive treatment and care eg oxygen therapy, suctioning of oesophageal fluid, chest x-rays, antibiotics etc. Sometimes affected pets need to be transferred to an emergency facility for monitoring whilst in oxygen therapy.

Animals die from **respiratory failure** not from paralysis of the legs. When animals start to have breathing difficulties because their breathing muscles are fatiguing, and/or they have aspiration pneumonia, oxygen supplementation is required. This can be given initially in the form of a nasal oxygen catheter put into a nostril but may need to progress to a general anaesthetic where pure oxygen can be delivered via an endotracheal tube. We make the judgement whether oxygen is required based on our visual assessment of the animal, its oxygen saturation and blood gas levels. Often these decisions need to be made quickly as some animals deteriorate rapidly. Some animals don't improve even after a long period on an anaesthetic machine. They are still breathing for themselves at this stage but if they worsen, ventilation is required to keep them alive. Our ventilator machine breathes for the animal and can be life-saving in extreme circumstances.

HOSPITAL STAY AND COSTS

In most cases your pet will be hospitalised for 2 or more days. Severely affected animals will require longer periods in hospital as recovery is prolonged and they are more likely to suffer complications eg aspiration pneumonia (where vomit or food has been inhaled into the lungs). Animals that are retching are sometimes hospitalised for up to a week as until they get their swallowing reflexes returned, they cannot eat or drink properly.

The costs involved with treating pets with tick poisoning vary according to the level of toxicity, which determines the level of hospital care and supportive treatment required. This can be difficult to estimate as some cases will deteriorate even with appropriate intervention. The size of the pet also affects costs as tick anti-toxin is expensive and is administered according to body weight.

Unfortunately, a small percentage of tick cases deteriorate and die despite every effort to save them.

Mildly affected tick poisoning cases (minimum costs)

- Small dogs (<15kg) and cats approx $450-700
- Larger dogs (>15kg) approx $600-900

More severely affected tick poisoning cases (minimum costs)

- Small dogs/cats $700+
- Larger dogs $900+

The following is a guide to prices for intensive care treatment of tick cases at Gordon Veterinary Hospital:

- Intra-nasal oxygen therapy $122-149 per 12 hours
- General anaesthetic $205, then $54 for every half hour thereafter
- Ventilation $75.50 per hour
- Intravenous fluids $129 initially, then $65-93 per day thereafter
- Intensive care hospitalisation from $110 per day depending on their size and the level of care
- Transport to overnight monitoring facility from $48
- Chest radiographs to check for pneumonia $224-266

We require a deposit prior to hospital treatment and care of tick poisoning cases at Gordon Vet Hospital ($450 for cats and small dogs <15kg; $600 for larger dogs >15kg).

For further information, please ring Gordon Veterinary Hospital on 9498 3000.