

Surviving Tick Paralysis

A Veterinary Guide For Dogs & Cats



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Introduction

Hello and thanks for downloading my ebook on Tick Paralysis. Those of you on the Eastern Seaboard of Australia will be all too familiar with the paralysis tick and the problems that it can cause. In a matter of days a healthy, strong pet can be transformed into a critically ill patient requiring advanced and expensive treatments to recover...with no guarantee of success.

This book is to help you understand tick paralysis and the treatment your pet may be going through. Just as important, it will give you the latest suggestions for preventing the disease. Prevention absolutely is better than cure for tick paralysis.

My name is Dr Chris Boulton and I am a veterinarian at Gordon Veterinary Hospital. Like all the vets at my practice I see a lot of ticks. Eighteen years of experience and post graduate studies in critical care medicine ensure that the patients under the care of myself and my staff do well in just about all cases..

But tick paralysis can be a fatal disease and even with the skills, experience and technology available to us...we don't win them all. Please read on to see what you can do to keep your best friend safe and healthy from ticks.



Emergency?

If you are in Sydney and worried your pet has a tick right now, especially if your pet is unwell, please call Gordon Veterinary Hospital right away on (02) 9498 3000. We can arrange an ambulance pick up if needed. In the meanwhile refer to the 'What To Do' section.

Otherwise keep reading and enjoy this book. I hope it is informative and welcome any comments through the Gordon Vet blog – www.gordonvetblog.com.au/tickparalysis



Tick Paralysis Explained

What Is The Paralysis Tick?

The paralysis tick is called *Ixodes holocyclus*. A tick is related to spiders. It is a parasite that engorges on blood as part of its lifecycle development. Australia has many species of tick and is the only place that has the paralysis tick. Paralysis ticks live on the eastern seaboard of Australia from North Queensland to Northern Victoria. Northern areas are affected by ticks all year round, the southern areas show a spring / summer seasonality.



Bush tick



Cattle tick



Paralysis tick



Possums and Bandicoots are the natural hosts of the paralysis tick, and unless very old or sick, are unaffected by their toxin. However, the paralysis tick will quite happily feed on dogs, cats and humans. Ticks attach to our pets as they walk through grass or bushes where native flora (ie

Possums, Bandicoots etc) have been. This means that all the National parks and bushland around the North Shore of Sydney (where I practice) are high risk areas, but most pets become affected without even leaving their backyard.



Are Paralysis Ticks Becoming More Common?

Yes. Global warming, changing weather patterns and increasing numbers of possums and bandicoots is causing a rise in the tick population. Local yard factors like overgrown areas, composting and mulching are also important. Shady areas under trees, with long grass underneath such as you get at parks, are also a problem.

All this has led to a steady rise in the number of paralysis ticks and of course toxicity to pets and even humans.

What Do Paralysis Ticks Look Like?

It is important to distinguish paralysis ticks from other common types of ticks you will see. Paralysis ticks tend to be light blue / green to grey in colour. They vary considerably in size, from two or three millimetres to as large as 10 millimetres or bigger (the size of a small grape).

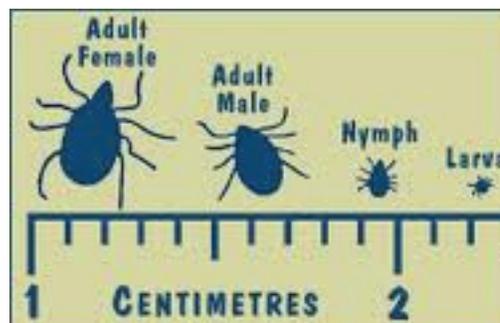
But don't be deceived by size. Even small paralysis ticks can cause serious illness. Any tick a quarter the size of your little fingernail can make your pet very sick. The ticks attach very firmly to the skin and often leave a crater.



Life Cycle of the Paralysis Tick

Ticks have 4 stages of life... here they are in a nutshell. Note that larva, nymphs and adults are all toxic.

- 1) Egg
- 2) Larva (6 legged)
- 3) Nymph (8 legged)
- 4) Adult (8 legged)



What do Paralysis Ticks do?

The tick will jump onto a pet to obtain a blood feed. The female tick will mostly attach to animals, starting off small and growing in size as it feeds. The male tick will feed off the female tick!

The mouthparts of the tick will burrow into the skin and it starts to suck blood. As it sucks it injects a neurotoxin. The clinical signs are initially vague but will eventually progress to the classic paralysis. This will happen over a number of days.

The first symptoms may be slightly laboured breathing or an increased respiratory rate without exercise. Your pet may exhibit a loss of coordination in the hind legs, or weakness climbing stairs. It may have a change in voice or may start to vomit or choke. As the poisoning progresses, your pet can have extreme difficulty breathing and may not be able to stand. Eventually, untreated tick poisoning will result in death from a variety of causes.



How Could This Happen to My Pet?

Even for the diligent owner it is easy to miss a paralysis tick in its early stages. The adult ticks start very small and only become big enough to see or feel after 3 days. Ticks are often hidden under collars, between toes or in other hard to reach places.

Any pet that has wildlife in their yard, or who frequents parks within tick-prone areas is at risk of tick paralysis.

So it is NOT all your fault if your pet gets tick paralysis! But what you do about it can make a big difference. Keep reading for more on this.



How Do We Diagnose Tick Paralysis

The Symptoms of Tick Paralysis

You need to be very mindful of the possibility of tick paralysis if you live in, or have recently visited, a high risk tick area. Watch out for the early signs and remember that the symptoms of poisoning may occur up to 5 days after the initial tick attachment.

The symptoms to watch for are:

- Loss of coordination in the hind legs. This will start with mild signs like slipping on the stairs or being weak to jump into the car.
- Change in voice or bark.
- Retching, coughing or vomiting. This again can start mildly and will progress. Not every pet will show all of these signs.
- Loss of appetite. Most pets with tick paralysis will not be interested in food.
- Progressive paralysis to include the forelegs.
- Difficulty breathing or rapid breathing. This is a very important sign as poor breathing is responsible for most deaths associated with tick poisoning.

Not all cases follow a simple progression. Unfortunately some animals can die suddenly in the very early stages of paralysis or even as they seem to be getting better.



What To Do If You Are Suspicious Of Tick Paralysis

What you do in the early stages of tick poisoning can make a big difference to the treatment outcome for your pet. If you are suspicious of tick poisoning (and even if you don't find one) here are some simple steps to take.

Search for Ticks

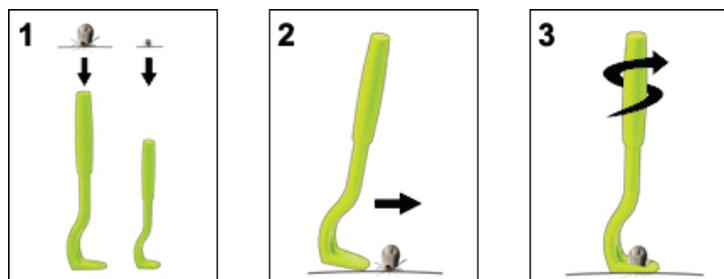
Pay particular attention to the head and neck, as well as between toes and under collars. Ticks can be hard to find on long haired dogs. Watch this video - it is not me but is a good example of searching for ticks. <http://www.youtube.com/watch?v=DSPNZAXLUDk>

Remove Ticks As Soon As Possible

This is really important. The sooner the tick is removed the sooner your pet will get better.

The latest evidence suggests that you are better not to try and kill the tick or harm it whilst it is still attached. It will inject more of the neurotoxin.

Instead, just pull the tick off. You can use a tick twister or a pair of tweezers.



Here is how the Tick Twister works (from www.ticktwister.com)

- Select the correct sized tool according to the size of the tick - the large hook for medium and large ticks or the small hook for small and very small ticks.
- Hold the handle between your thumb and index finger and slide the fork end of the tool toward the tick until it is caught between the prongs.
- Lift the tool very lightly and rotate in either direction several (2-3) turns. You will feel when the tick has released its mouth-parts and it is safe to pull up on the tick and Tick Twister®.



Keep your pet calm and at a comfortable temperature (not too hot or cold)

The tick toxin may work more effectively at higher temperatures, so do not overheat your pet. This also applies with aftercare. Just maintain a comfortable temperature.

Keeping your pet calm is one of the most important things you can do. Most tick paralysis patients are not breathing very well. Some will die of respiratory problems. Cats and stressy dogs are at serious risk of suddenly getting much worse with their breathing if they are not kept calm.

Do not offer food or water

This may lead to pneumonia and breathing difficulties if your dog can't swallow properly.

Seek veterinary attention as soon as possible.

Veterinary attention should be sought for most dogs that are showing symptoms of tick paralysis. Seek veterinary treatment as soon as possible.

If you are unsure you should ring (02) 9498 3000 and we can advise you. Even out of hours veterinary attention should be sought.



Treating Tick Paralysis

Treating tick poisoning is an intensive (and expensive) process. It requires high numbers of experienced veterinary and nursing staff, sophisticated equipment and on occasion care around the clock. Tick patients can be critically ill and without this intensive monitoring they can very rapidly crash and die.

Gordon Vets is very well suited for tick care. Our vets combined boast over 100 years of experience and we have been treating ticks for all of those years. We have all the monitoring and support equipment required – many tens of thousands of dollars worth of equipment to make sure your dog is safe.

Here is a list of treatments that we use at Gordon Vets to support and treat your pet. Please remember that each patient requires different treatments – our experienced vets will decide what treatments are best.

Relieve Stress and Anxiety

Patients with tick paralysis can get really stressed. This can be due to many factors such as:

- The nature of the pet (some are more stressy than others)
- Breathing difficulties
- Vomiting, paralysis and all the other symptoms associated with tick paralysis.
- Being in a strange (hospital) environment

Relieving the stress and anxiety is really important because it will cause an increase in mortality of approximately five times.

Much of the stress is associated with breathing difficulties, so making sure that patients have a good airway and a good ability to breathe is absolutely vital. There is much we can do to monitor and support the respiratory tick patient at Gordon Veterinary Hospital. See below for more details.

Sedation can also help and there are numerous drugs we can use to help keep patients calm and quiet. Nursing care is also critical for reducing anxiety.



Stabilise The Patient

In critical care medicine it is very important to stabilise the vital organs. Here are just some of the treatments we use to assess and treat problems with the vital organs. For your interest the vital organs are:

- Cardiovascular system
- Respiratory system
- Urinary system
- Nervous system

Breathing and respiratory problems can usually be stabilised by keeping an open airway and by supplying supplementary oxygen therapy. We monitor the success of this with specialised equipment.

Cardiovascular problems would include changes in blood pressure and we will also include here changes in temperature. We don't want our tick patients too hot but certainly not too cold.

The main urinary tract problem we see with tick paralysis is an inability to urinate, leading to a massively enlarged bladder. Keeping urine flowing through regular expression or catheterisation is very important to prevent bladder and kidney damage.

Nervous system problems...where do we start? Tick paralysis is a nervous system disease first and foremost. However it is actually not that common for pets to die of paralysis – breathing problems account for by far the most deaths. So we support them through the paralysis with diligent and gentle nursing and wait for recovery.

Tick Antiserum

Tick serum is the blood product of dogs that are immune to the tick toxin. It is the cornerstone of tick treatment and works by binding toxin in the bloodstream that would otherwise make its way to the nerve-muscle junction where the toxin causes paralysis.

The serum is given as a blood transfusion. It is given into a vein in dogs but we give it into the abdomen in cats. It is the most expensive part of tick paralysis treatment.



We vets are still trying to understand exactly how the serum works, how much we need, how best to give it and many more questions. The common wisdom is that the serum should be given as early as possible. This means it can mop up as much of the toxin as possible before the toxin takes effect. This is another reason to get your pet to us sooner than later.

There is a chance of allergic reactions to the tick serum, especially for dogs and cats that have previously received the serum. We take care to minimise the chance of such reactions.

Oesophageal Management

Tick paralysis causes a classic weakness in the back legs, but it also causes a weakness in the throat and oesophagus. The oesophagus will become flaccid and will expand with saliva, vomit and food. This is called a megaesophagus.

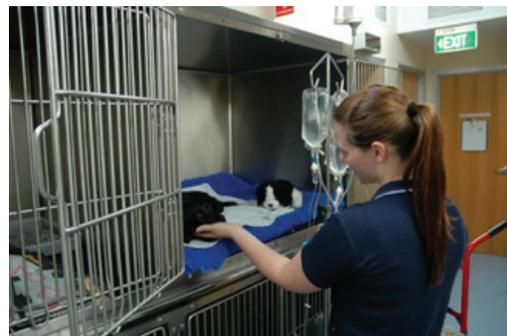
This regurgitated fluid (often a sticky white material) can cause three problems:

- It can sit in the back of the throat, making breathing very difficult.
- It can get sucked back into the lungs, called an aspiration pneumonia. This can be life threatening.
- It can burn the oesophagus, causing an oesophagitis.

We manage the megaesophagus by sucking out the thick, frothy fluid as needed to clear the airways. This is a time intensive process and may require overnight care.

Positioning & Nursing

The importance of basic, caring, diligent nursing care cannot be overestimated. Our nurses at Gordon Vets are highly trained in monitoring and treating tick patients. They make sure our patients are comfortable, warm and dry. Nurses make sure fluid lines and monitoring equipment are working . They also will decide which position each patient seems most comfortable to breathe in. Without such care we would lose many of our patients.



Insecticide Treatment



No tick treatment is effective if the patient has another tick that we have not found, because the hidden tick will continue to secrete the neurotoxin. This can happen a lot. It is very important to kill any remaining (unfound) ticks with a treatment such as Frontline Spray, which works quickly and can be sprayed all over. Sometimes we will rinse a patient rather than spray with Frontline.

Treating Severe Respiratory & Cardiac Problems

Severe respiratory and cardiac problems are the most likely reason for a patient to die of tick paralysis. At Gordon Vets we go to great lengths to diagnose and treat these problems as early as possible. That way we can hopefully prevent a reversible problem turning into a deadly one.

Regular, systematic monitoring, blood tests for respiratory gases, pulse oxygen and carbon dioxide breathing machines are just some of the ways we help to diagnose respiratory and cardiac problems.

Treatments may include sedation, oxygen therapy, suction of the throat, tubing the larynx or trachea and possibly general anaesthesia or ventilation to avoid respiratory exhaustion.

Prognosis For Tick Treatment

Most pets that suffer tick paralysis will respond well to the treatment and will make a full and uneventful recovery. Unfortunately some will not. The mortality rate is 4-8% even with the best of care. Mildly affected animals can still die suddenly. Severely affected animals can beat all the odds and survive.

Ultimately we just don't know how each little patient is going to go, but here are some factors that can affect the prognosis of a patient with tick paralysis.



Things That Make For A Bad Prognosis

- Increased age – older dogs may have other problems that affect their ability to compensate for the tick paralysis.
- Rapid worsening of clinical signs
- Retching
- Breathing difficulties
- Stress
- Severe walking difficulties

Things That Make For A Good Prognosis

- Use of tick antiserum (TAS). Give it very soon into treatment. Patients still need supportive care
- Killing the tick on the patient or removing straight away
- Young patients



Preventing Tick Paralysis

Search pets every day for ticks

The most essential preventative measure is a thorough search of your pet's skin and coat every day during the paralysis tick season. This should be done even if tick control products have been applied. The method gives you at least 3 chances of finding a tick before serious tick paralysis occurs since the tick must generally be attached for 3 to 5 days before causing paralysis.

See the video again.

<http://www.youtube.com/watch?v=DSPNZAXLUDk>

Remove ticks

The best way to remove a tick is with a special tick hook available at the hospital. Alternatively tweezers are quite effective. See the section above for more information.

Preventatives for paralysis tick control

In addition to daily searching, application of products specifically intended for tick control can greatly reduce the risk of tick poisoning for your pet.

- Advantix – Fortnightly application of Advantix on the back of the neck for dogs < 25kg or in 3 separate spots on the back in dogs > 25kg. This product is NOT SUITABLE FOR CATS.



- Kiltix collar – These can be used in combination with the Advantix and need to be changed every 6 weeks. Remove during bathing or swimming. This product is NOT SUITABLE FOR CATS.



- Frontline top spot– The topospot application every 2 weeks can be used as an alternative to Advantix for tick prevention in dogs.



- Frontline spray – Spray every 3 weeks for prevention (use gloves and rub into skin & coat). It is also a reasonable (though off label) preventative for cats, especially as we can't use Advantix in cats.



- Proban tablets – Used every 2nd day in dogs. They are not registered for use in cats. Do not use with Kiltix collars. These tablets are being discontinued in 2011.

Our first choice at Gordon Vets for dogs is Advantix fortnightly combined with the Kiltix collar combined with a daily search for ticks.

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

