



Surviving Tick Paralysis in the Southern Highlands

A veterinary guide for dogs and cats



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Introduction

Hello and thanks for downloading your 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.

Even though in the past, tick paralysis in the Southern Highlands was extremely rare, in the last ten years or so, more and more cases are being diagnosed. The areas in which the pets are currently most at risk include; the Mount Gibraltar area, Tallong, Colo Vale, Hill Top and Burradoo – just to name a few.

If you happen to take your pet to the coast for the weekend, like many of us do, then there is a significantly increased risk of coming in contact with the paralysis tick.

Why is tick paralysis important? Simply because, in a matter of just a few 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 booklet has been designed to help you understand tick paralysis and it's prevention. Also the treatment your pet may be going through if your pet has been affected. To my mind, most important step is prevention and therefore, we will share the latest suggestions for preventing tick bite. Prevention absolutely is better than cure for tick paralysis.

My name is Dr Diederik Gelderman and I am a veterinarian at HIGHlands Veterinary Hospital. Like all the vets at my practice I see a lot of ticks. Forty years of experience and on-going studies in critical care medicine ensure that the patients under the care of this practice receive top medical care for tick paralysis as well as any other problem.

Unfortunately though, all too often, tick paralysis can have a fatal outcome even with the skills, experience and technology available...unfortunately we can't save every pet.

So it is VERY important that you read on to see what you can do to keep your best friend safe and healthy from ticks.

Emergency?

If you are in the Southern Highlands and worried your pet has a tick right now, especially if your pet is unwell, please call HIGHlands Veterinary Hospital right away on (02) 48721144. We can arrange a pick up if needed. In the meantime refer to the 'What To Do' section.

Alternatively, you can ring Ingleburn [Veterinary Emergency Centre on \(02\) 91990769](tel:(02)91990769)



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.

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 (i.e. Possums, Bandicoots etc.) have been. This means that almost all the National parks, scrubby areas and bushland on the eastern seaboard are high risk areas.

However, most pets become affected without even leaving their backyard.

Are Paralysis Ticks Becoming More Common?

Yes they are. 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 the other common types of ticks you will see. This can be hard to do unless you are quite experienced. Naturally, using Google to view pictures of the tick that you are trying to identify is a real aid. The bottom line is- if you see a tick on your pet, assume the worst and IMMEDIATELY bring your pet in for us to examine.

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 life stages... here they are briefly explained. 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 quite deeply into the skin as it starts to suck blood. As it sucks it injects a neurotoxin (a poison which affects the nervous system). The clinical signs are initially vague but will eventually progress to the classic paralysis. This happens 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.

The more ticks on your pet, the more rapid the escalation in clinical signs and the more rapidly your pet will deteriorate – and the harder your pet will be to treat successfully.

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 off very small and only become big enough to see or feel after 3 days or so. Ticks are often hidden under collars, between toes or in other hard to reach places.

And if you have a long-haired or semi-long-haired pet, then it's even HARDER to find a tick on your pet.

Any pet which encounters wildlife, or 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 prevention is a much better strategy and a lot more successful and less expensive than treatment. What you do about it if your pet does have tick paralysis can make a big difference. Keep reading for more on this.

How Do We Diagnose Tick Paralysis

The Symptoms of Tick Paralysis

If you live in, or have recently visited, a high risk tick area, then you need to be very mindful of the possibility of tick paralysis. Watch out for the early signs and remember that the symptoms of poisoning may occur up to 5 days after the initial tick attachment. Time is of the essence if your pet has tick paralysis. Delaying treatment by even a few short hours can significantly affect the outcome of treatment.

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 too 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 going forward from the hind legs to include the fore legs.
- 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.

- Remember – it can be VERY hard to find all the ticks on an affected pet – so if you are suspicious that your pet has tick paralysis, come in and see us immediately.

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 nor 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.

Come in and see us ASAP – or if you are out of the area - seek veterinary attention as soon as possible.

I cannot stress this strongly enough!

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) 48721144 and we can advise you. If you suspect that your pet has been affected by a tick, then 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, around the clock care. Tick paralysis patients can be critically ill and without this intensive monitoring they can very rapidly crash and die.

HIGHlands Veterinary Hospital has great expertise in and is very well suited for tick care. We have been treating tick affected dogs and cats for over 40 years.

However, if you wanted an even higher level of intensive care, then you could choose to be referred to either the Ingleburn Emergency Centre or one of a number of Emergency centres in Sydney. The choice is yours.

Here is a list of treatments that can be used to support and treat your pet. Please remember that each patient requires different treatments – our experienced vets decide what treatments are best on an individual basis.

Relieve Stress and Anxiety

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

- The nature of the pet (some are more easily stressed 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 very important because it will cause an increase in mortality of about five fold. 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 vital.

There is much that can be done to monitor and support the respiratory compromised tick patient. We'll go through those next...

Sedation can also help and there are numerous drugs (like morphine) 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 important to stabilise the vital organs. Here are just some of the treatments used to assess and treat problems with the vital organs. These vital organs include:

- 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. The success of this treatment is monitored through the use of specialised equipment.

Cardiovascular problems include changes in blood pressure and / or changes in temperature. We don't want our tick patients too hot but certainly they can't be too cold either.

The main urinary tract problem we see with tick paralysis is an inability to urinate, leading to a massively enlarged bladder. Keeping urine flowing by regularly expressing the bladder 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 blood

stream 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.

Tick serum is a very expensive product and therefore an expensive part of tick paralysis treatment.

Vets are still trying to totally 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 and the earlier it is given, the better and the more quickly it works. 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 early rather 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 and cause what is called - aspiration pneumonia. This can be life threatening.
- It can burn the oesophagus, causing an oesophagitis.

We manage the megaoesophagus 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 HIGHlands Veterinary Hospital 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. Without such care, we would lose many of our patients.

Insecticide Treatment

No tick treatment is effective if the patient has another tick that has not been found. This is because the hidden tick will continue to secrete the neurotoxin into the patient. This can happen a lot.

It is very important to kill any remaining (unfound) ticks with some form of appropriate treatment, one which works quickly and is highly effective. Sometimes we may even need to clip or shave animals off in order to find any hidden ticks.

Treating Severe Respiratory & Cardiac Problems

Severe respiratory and cardiac problems are the most likely reasons for a patient to die of tick paralysis. At HIGHlands Veterinary Hospital 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 to help 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 even assisted 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 typically 4-8% even with the best of care. Mildly affected animals can still die suddenly and unexpectedly.

And then we can also see severely affected animals beat all the odds and survive.

Ultimately we just don't know how each 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.
- A delay in getting the pet in to the vet and getting treatment started – especially a delay in getting anti-toxin.
- Multiple ticks on a pet
- Rapid worsening of clinical signs
- Retching
- Breathing difficulties
- Stress
- Severe walking difficulties

Things That Make For A Good Prognosis

- Use of tick antiserum (TAS). Giving it early into treatment. Remember, patients will still need supportive care
- Killing the tick(s) 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 from us. 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. There are MANY products now available.

NOTE: Even if you have used an effective product on your pet, it is still wise to do regular daily searches.

Come in to see us and we'll help you tailor your personalised tick prevention program.



Advantix

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.



Bravecto



Bravecto – this is a tablet which will prevent ticks for up to 4 months in your dog. Or if you use the 'spot on' form it will last SIX months.

Kiltix collar

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.



Seresto collars



Seresto collars – Four months of continuous protection against ticks and eight months against fleas in cats and dogs.

Frontline top spot

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

We are seeing more and more 'breakthroughs' in pets which have had Frontline Top Spot applied.



Frontline spray



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.

Our first choice at HIGHlands Veterinary Hospitals for dogs is Bravecto every three or six months combined with a daily search for ticks...

For cats we recommend the use of Bravecto as well of course – regular, thorough 'checks'.

For further information please ring HIGHlands Veterinary Hospital on (02) 48721144.

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