

WOODVALE PARK

VETERINARY HOSPITAL



Unit 10, 923 Whitfords Avenue, Woodvale WA 6026

Phone: (08) 9409 6968

www.woodvaleparkvet.com.au

Aimeroy Pty Ltd ABN 53 165 893 701

Tick and Tick Control

Basics

OVERVIEW

- Dogs and cats may be parasitized by ticks; ticks found on dogs and cats are in the families “*Ixodidae*” and “*Argasidae*”
- Ectoparasites are parasites that live on the surface of the host animal, such as on the skin
- Ticks are ectoparasites that feed only on the blood of their hosts; they are arthropods, closely related to scorpions, spiders, and mites
- Ticks can carry many disease-causing organisms that they transmit to their host animal—the disease-causing organisms include protozoa, bacteria, rickettsiae, and viruses; diseases caused by organisms carried by ticks are called “tick-borne diseases”
- Ticks may cause other health problems, including allergic reactions (hypersensitivity), paralysis, and blood-loss anemia

SIGNALMENT/DESCRIPTION OF PET

Species

- Dogs
- Cats
- Cats are efficient at removing ticks, but tick attachment and infection with disease-causing organisms carried by the tick and transmitted to the cat (tick-borne diseases) have been diagnosed in domestic cats; these diseases include Lyme disease, anaplasmosis, and cytauxzoonosis

SIGNS/OBSERVED CHANGES IN THE PET

- Attached ticks or tick feeding cavities may be seen on the skin
- Associated tick-borne diseases—numerous signs, vary with the organ system(s) affected
- Irritation caused by the tick bite and subsequent self-trauma (as from scratching or biting at the site of tick attachment)
- Small, pinpoint areas of bleeding (known as “petechia”)
- Blood-loss anemia (low red-blood cell count)
- Leg and joint abnormalities
- Irregular heart beat related to blockage of electrical conduction in the heart (known as “heart block”)
- Weakness or paralysis

CAUSES

- Ticks—attracted to hosts by warmth, presence of carbon dioxide, physical contact, and host-associated odors

RISK FACTORS

- Pets can be in close contact with ticks, owing to movement of ticks into suburban environments and expansion

of suburban environment into surrounding forests, prairies, and coastline areas

- Travel is a risk for exposure outside of a pet's home environment

Treatment

HEALTH CARE

- Outpatient, after removal of ticks
- Removal—do as soon as possible to limit time available for transmission of the disease-causing organism or nervous-system poison (known as a “neurotoxin”) from the tick to the dog or cat; grasp ticks close to the skin with fine-pointed tweezers and gently pull free; wash feeding cavity (area of tick attachment) with soap and water; generally sufficient to prevent local inflammation or secondary infection

Follow-Up Care

PREVENTIONS AND AVOIDANCE

- It may be difficult to avoid environments that harbor ticks
- Tick control does not always equal control of tick-borne diseases; often the goal is the perceived absence of ticks on the host animal (clinical repellence)
- Pets—some period of attachment and tick feeding may occur or live ticks may spend some time crawling on the pet after the ticks have been exposed to lethal levels of an agent or chemical designed to kill ticks (known as an “acaricide”); immature ticks of some species are very smallDisease-causing organisms carried by ticks—may be transmitted very rapidly (viruses) or may require several hours (such as for *Rickettsia rickettsii* that causes Rocky Mountain spotted fever) or days (such as for *Anaplasma phagocytophilum* that requires less than one day for transmission or for *Borrelia burgdorferi* [cause of Lyme disease] that requires 1–2 days for transmission or for *Ehrlichia* that requires 2–3 days)

Insecticides and Acaricides (Chemicals to Kill Insects and Ticks)

- In the United States, the Environmental Protection Agency (EPA) licenses topical agents as safe and effective In many areas, tick control is required year-round
- Collars containing chemicals to kill ticks (known as “acaricidal collars,” such as Preventic Tick Collar for Dogs, Virbac) and spot-on treatments (such as Frontline Top Spot, Merial; K9 Advantix, Bayer; Promeris, Pfizer; and Vectra 3D, Summitt VetPharm)—have gained wide use; ease of application and owner compliance is as important as effectiveness (NOTE: always read the entire label of any chemical designed to kill insects or ticks and use it only as instructed; *do not* use dog products on cats)
- Disease transmission interruption studies have been published for products containing fipronil, amitraz, and permethrin; at approximately 4 weeks after product application effectiveness in prevention of transmission of *B. burgdorferi* (organism that causes Lyme disease) to dogs was 75–87.5% for fipronil (found in Frontline Top Spot) and 100% for permethrin (found in K9 Advantix and Vectra 3D); amitraz (found in Preventic Tick Collar for Dogs and Promeris) was 100% effective at 7 days post-application

POSSIBLE COMPLICATIONS

- Tick-borne diseases or tick paralysis

EXPECTED COURSE AND PROGNOSIS

- Depends on which disease-causing organism has infected the dog or cat or if the nervous-system poison carried by the tick has affected the pet

Key Points

- Removal of ticks—do as soon as possible to limit time available for transmission of the disease-causing organism or nervous-system poison (known as a “neurotoxin”) from the tick to the dog or cat; grasp ticks close to the skin with fine-pointed tweezers and gently pull free; wash feeding cavity (area of tick attachment) with soap and water; generally sufficient to prevent local inflammation or secondary infection
- Application of hot matches, petrolatum jelly, or other materials not only fails to cause tick detachment but allows for longer periods of attachment and feeding
- Tick control is challenging; in many areas, tick control is required year-round

Notes

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Blackwell's Five-Minute Veterinary Consult: Canine and Feline, Fifth Edition, Larry P. Tilley and Francis W.K. Smith, Jr. © 2011 John Wiley & Sons, Inc.