LINDA MAR VETERINARY HOSPITAL/
COASTAL CAT CLINIC

PAW & CLAW PRINTS

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Vaccinations and Guidelines- Feline Vaccine Protocols, Placement and Fibrosarcomas (Part 2 of 3)

As part of your cat's general health maintenance, regular vaccines should play an integral role. Exactly which vaccines and how frequently they are given should be a subject discussed by you with your veterinarian. The age of your cat, whether he is indoor or outdoor, and his possible interactions with other cats or wildlife, all influence the vaccine protocol that is best for your feline companion. Linda Mar Veterinary Hospital and Coastal Cat Clinic recommend FVRCP (feline distemper) and PureVax Rabies as core vaccines. Depending on the age and indoor/outdoor status of your cat, PureVax FeLV (feline leukemia) vaccine may be added. We also strongly encourage FeLV/FIV (feline leukemia and feline immunodeficiency viruses) blood testing for **all** kittens.

Kitten Vaccines should begin at about 8 weeks of age. Three FVRCP booster vaccines should be given 4 weeks apart (8, 12 and 16 weeks of age), with the PureVax Rabies vaccine given during the 16 week FVRCP booster. If you are planning on allowing your kitten to have outdoor access and there is the possibility of interaction with other neighborhood cats, the PureVax FeLV vaccine should also be administered. This vaccine takes an initial two boosters given 3-4 weeks apart, ideally at 10 and 13-14 weeks of age. By spacing out the vaccines in this pattern, we allow the immune system to mount an acceptable response for active immunity against the vaccine and future antigen exposure to the virus itself. We are also reducing the possibility of inducing a vaccine reaction by giving as few vaccines at one time. All of these vaccines should then be boostered at one year, and then adjusted for lifestyle thereafter (given annually or every 3 years).

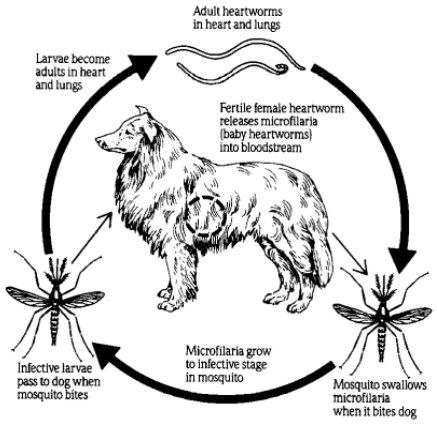
For adult cats over one year with an unknown vaccine history, we recommend an amended vaccination schedule which includes 2 FVRCP vaccines (given 4 weeks apart and boostered one year later), the PureVax Rabies (boostered in one year), and the FeLV vaccine series of two (3 weeks apart and boostered in one year) dependent on

Inside This Issue

Canine Heartworm Disease and Prevention

Life Cycle

Heartworm disease is caused by a parasitic worm, *Dirofilaria immitis*, which is transmitted by mosquitoes. Mosquitoes pick up a larval stage of the parasite called microfilaria by biting an already infected dog (dog #1), and that microfilaria then develops into its infective stage in the mosquito before being transmitted to another dog (dog #2) by biting him. Once the dog is bitten by an infected mosquito, the microfilaria migrate and mature into adult worms that live in the circulatory system (predominantly the right side of the heart and the large blood vessels going to and coming from the lungs). Adult worms breed within the dog's circulatory system, emitting more microfilaria into the bloodstream that can be picked up by mosquitoes. The entire life cycle is completed in approximately 6 months from larva to adult.



Adult worms can grow to be over a foot in length, may live up to 7 years in the dog, and are not limited to affecting just the circulatory system. Some worms may aberrantly migrate and develop in the kidneys, liver and brain. [Note: Cats may also be infected with heartworms, thought often limited to high concentration areas such as the South-Eastern United States and the mid-pacific coast/Santa Cruz.]

Signs of Infection

The severity of clinical signs due to heartworm disease are directly related to the burden of worms present in the dog, how long the disease has been present, and an individualized body response to heartworm infection. Those dogs with a low number of worms, have early disease, or have a high tolerance to infection may show no clinical signs. Those dogs with a heavy worm burden, have chronic disease, or have high sensitivity to their infection may show a variety

Vaccines and Guidelines continued from page 1

lifestyle. FeLV/FIV blood testing should also be conducted.

Once your cat or kitten has completed one of the initial vaccine protocols, a vaccination maintenance schedule can be carried out over your cat's lifetime. The ideal maintenance schedule balances minimizing your cat's risk of contracting infectious disease and reducing the possibility of having an adverse vaccine reaction. By using PureVax products by Merial, LMVH and CCC are helping to promote the continued health of your feline companion through reduced cancer risk. PureVax Rabies and FeLV vaccines are not associated with inflammatory-induced cancers (fibrosarcomas), but must be boostered annually.

Indoor cats (those that never go outside, go out on a deck, are supervised in an enclosed yard, or only have a minimal chance of getting out and having contact with other cats or wildlife) should receive the FVRCP every three years and PureVax Rabies vaccine annually. Indoor/Outdoor cats who have occasional interactions with other cats or wildlife should receive the FVRCP every 3 years, the PureVax Rabies annually and the PureVax FeLV annually. Those indoor/outdoor cats that have frequent contact with other cats and wildlife, should follow the protocol from above, as well as receive yearly FeLV/FIV testing. For those who fight frequently and are at increased viral risk, annual FVRCP may be necessary.

Ever since veterinary medicine started noting an increase in the frequency of feline fibrosarcomas, great steps have been taken to reduce the occurrence. Believed to be caused as the result of an inflammatory response to "killed" vaccines (typically Leukemia and Rabies vaccines), veterinarians have attempted to modify booster schedules, give no unnecessary vaccines and use products without adjuvants to reduce the cancer risk. Also, LMVH and CCC use designated areas to administer feline vaccines subcutaneously in the event of any adverse reaction. The FVRCP is administered over the right shoulder blade; Rabies is administered over the right hind leg as low as possible; FeLV is administered over the left hind leg as low as possible. The placement of these vaccines also allows you to monitor these sites more easily.

It is not uncommon for a small, firm, painless swelling to form under the skin where the vaccine was injected. This lump generally resolves on its own within 2 weeks. If you note an increase in size one month after vaccination, that the lump is greater than 2 cm, or if it persists for longer than 3 months after vaccination, make an appointment with your veterinarian to have the site evaluated.

Fibrosarcoma often begins as a small lump, but it persists and grows in size. Eventually the neoplasia 'ruptures', exposing a fleshy vascular draining wound. In some long haired cats, the growth can be missed and at time of rupture, some owners may mistake it for an abscess. Depending on location, the cancer may be removed, but an unfortunate characteristic to this form of neoplasia is the high probability of recurrence. Fibrosarcomas develop 'roots' where they grow, seeding into surrounding tissue. Even if the central mass is successfully removed, re-growth in the same location is likely to occur within a few months. Some adjunctive therapies can be used once the mass is removed, such as radiation, but they are only believed to be palliative.

As a knowledgeable feline pet owner, you should include vaccinations as an essential part of any health maintenance protocol. Exactly which vaccines are needed, their frequency and the inclusion of viral testing should be tailored to the lifestyle of your kitten or cat. Taking into account the possibility of adverse vaccine reactions, risks can be minimalized through the use of adjuvant free PureVax products, specific vaccine placement to allow for surgical intervention if needed, and only vaccinating against necessary viruses for your individual cat or kitten. If you should have any questions or concerns regarding the ideal vaccine protocol for your feline companion, please schedule an appointment with us at Linda Mar Veterinary Hospital or Coastal Cat Clinic.

Canine Heartworm continued from page 1

of clinical signs. Clinical signs include those of congestive heart failure, significant coughing, exercise intolerance, or fainting/ loss of consciousness when microfilaria or pieces of adult worms shower the circulatory system as micro-thromboemboli and micro-pulmonaryemboli (clots). No matter what the worm burden, chronicity or sensitivity is to the canine, heartworm is an extremely dangerous infection and can be fatal.

Detection

Heartworm infection can be detected through a simple blood test. The blood is examined by a laboratory for the small, immature microfilaria, or for antibodies or antigens produced in response to the heartworm. The blood can be drawn during your annual veterinary appointment, or during the Tuesday evening vaccine clinic. If the test is positive, we will schedule a veterinary appointment with you so that staging the progression of the disease, treatment options and prognosis can be discussed.

Prevention and Treatment

Like the adage says- "An ounce of prevention is worth a pound of cure." We at LMVH/CCC follow and promote prevention protocols for the general health and well being of your canine. We highly recommend the use of safe monthly medications to prevent the devastating effects of heartworm disease. Puppies can be started on heartworm preventatives at 3 months of age without having a heartworm test (HWT) performed first. At the one year booster of vaccines (first booster a year after completing the puppy vaccine series), a HWT should be obtained to establish heartworm status. Puppies over 6 months of age, adult dogs that have never been on a preventative, and dogs that have received seasonal preventatives (off medication for a period greater than 6 weeks) are required to have a HWT prior to starting any preventative. Once found negative, heartworm preventatives should be started immediately. If your dog is on heartworm preventative all year round without any break in administration, we only require testing every 3 years. If your dog is not on preventative, we recommend annual testing. An additional benefit to using monthly preventatives is they also prevent roundworms, whipworms and hookworms- intestinal parasites that commonly cause diarrhea. [Roundworms and hookworms have zoonotic potential- the ability to infect humans].

Most canines can be successfully treated for heartworm disease if detected early. A systematic elimination process is used as treatment. The adult worms are killed through a series of intramuscular injections of an arsenic compound. During these treatments, the adult worms die and begin decomposition. They are then absorbed by the body over a period of several months. Extreme care should be taken to limit any exercise and excitement, as the dying worms may be carried to the lungs, lodge in small vessels and cause lung damage, extreme respiratory distress or even death. When the resting period is complete, a gradual return to normal activity is begun. Once the adult heartworms are eliminated, monthly preventatives must then be administered to rid the bloodstream of microfilaria (not affected by the drug used to kill adult worms). The entire process can take several months to complete, may have hazardous health effects, and is expensive when compared to the consistent use of monthly preventatives. By following a preventative protocol, you are promoting better overall medicine for your canine companion.

SPECIAL EVENTS, SERVICES, AND PROMOTIONS

☼ WEEKLY LOW-COST DOG VACCINE CLINIC: EVERY TUESDAY EVENING FROM 7:00-8:00PM

☼ CHECK OUT OUR NEW WEBSITE!!! www.lindamarvet.com