

## Feline Phlebotomy: Proceed with Care



True aneurysms are focal or diffuse dilations >50% of the original vessel diameter with thinning of the vessel wall; all wall layers remain intact. Pseudoaneurysms are dilations in the vessel wall in which all wall layers are not intact. The defect is in the tunica intima and media; the adventitia or encapsulated hematoma composes the outermost layer. The hematoma is in communication with the vessel, causing turbulent blood flow. Although rare, trauma or foreign objects are the most common causes.

A 4-month-old kitten had a pseudoaneurysm subsequent to jugular venipuncture. During phlebotomy, the kitten vocalized, collapsed, and defecated, but seemed to be normal 30 minutes later. A large mass was subsequently noted

at the venipuncture site. The cat was discharged with a hematocrit of 35%. Four days later, hematocrit was 17%, and the owner had noted 3 or 4 additional episodes of vocalization, neck extension, and apparent pain. Cervical ultrasound revealed a layered, mixed echogenic area ~2 cm. An irregularly round, thick-walled, 2-cm anechoic/cystic lesion was seen adjacent to the carotid artery. Conservative management was elected. Reexamination 2 weeks later showed Horner syndrome on the kitten's left side; pseudoaneurysm diameter was now 1 cm. The superficial hematoma had nearly resolved and the kitten was comfortable. One month after original presentation, Horner syndrome had resolved and the mass effect was barely palpable.

### ■ Commentary

Careful phlebotomy of the jugular vein is always warranted in cats. Although complications are rare, care should be taken to avoid venipuncture of the carotid artery: the needle should be directed parallel with the jugular vein without fishing around for the vein. Also, jugular venipuncture should never be attempted on an awake animal that is moving or in respiratory distress. Interestingly, this kitten did quite well with conservative care, and the formation of the pseudoaneurysm demonstrated the body's attempt to heal itself after trauma and the ability of the practitioner to achieve diagnosis through noninvasive and simple technology.—Heather Troyer, DVM, DABVP, CVA

### ■ ■ Source

Carotid artery pseudoaneurysm in a cat. Townsell MY, Biller DS, Grauer GF. *J FELINE MED SURG* 14:819-821, 2012.

### ■ ■ ■ For More

For step-by-step insight on how to perform a venipuncture in cats, see **How to Perform a Feline Venipuncture** by Dr. Deborah S. Greco at [cliniciansbrief.com/perform-feline-venipuncture](http://cliniciansbrief.com/perform-feline-venipuncture)

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### TRIFEXIS® (spinosad + milbemycin oxime)

#### Chewable Tablets

Before using TRIFEXIS chewable tablets, please consult the product insert, a summary of which follows:

**Caution:** Federal (USA) law restricts this drug to use by or on the order of a licensed veterinarian.

#### Indications:

TRIFEXIS is indicated for the prevention of heartworm disease (*Dirofilaria immitis*). TRIFEXIS kills fleas and is indicated for the prevention and treatment of flea infestations (*Ctenocephalides felis*), and the treatment and control of adult hookworm (*Ancylostoma caninum*), adult roundworm (*Toxocara canis* and *Toxascaris leonina*) and adult whipworm (*Trichuris vulpis*) infections in dogs and puppies 8 weeks of age or older and 5 pounds of body weight or greater.

#### Contraindications:

There are no known contraindications to the use of TRIFEXIS Chewable Tablets.

#### Warnings:

Not for human use. Keep this and all drugs out of the reach of children.

Serious adverse reactions have been reported following concomitant extra-label use of ivermectin with spinosad alone, one of the components of TRIFEXIS Chewable Tablets (see **ADVERSE REACTIONS**).

#### Precautions:

Treatment with fewer than 3 monthly doses after the last exposure to mosquitoes may not provide complete heartworm prevention (see **EFFECTIVENESS**).

Prior to administration of TRIFEXIS, dogs should be tested for existing heartworm infection. At the discretion of the veterinarian, infected dogs should be treated with an adulticide to remove adult heartworms. TRIFEXIS is not effective against adult *Dirofilaria immitis*. While the number of circulating microfilariae may decrease following treatment, TRIFEXIS is not indicated for microfilariae clearance. Mild, transient hypersensitivity reactions manifested as labored respiration, vomiting, salivation and lethargy, have been noted in some dogs treated with milbemycin oxime carrying a high number of circulating microfilariae. These reactions are presumably caused by release of protein from dead or dying microfilariae.

Use with caution in breeding females. The safe use of TRIFEXIS in breeding males has not been evaluated. Use with caution in dogs with pre-existing epilepsy. Puppies less than 14 weeks of age may experience a higher rate of vomiting.

#### Adverse Reactions:

In a well-controlled US field study, which included a total of 352 dogs (176 treated with TRIFEXIS chewable tablets and 176 treated with an active control), no serious adverse reactions were attributed to administration of TRIFEXIS chewable tablets. All reactions were regarded as mild.

In some cases, dogs vomited after receiving TRIFEXIS. To ensure heartworm prevention, observe your dog for one hour after administration. If vomiting occurs within an hour of administration, re-dose with another full dose.

Reactions that occurred at an incidence >2% (average monthly rate) within any of the 6 months of observation are presented in the following table:

Average Monthly Rate (%) of Dogs With Adverse Reactions

Adverse Reaction	TRIFEXIS Chewable Tablets*	Active Control Tablets*
Vomiting	6.13	3.08
Pruritus	4.00	4.91
Lethargy	2.63	1.54
Diarrhea	2.25	1.54

\*n=176 dogs

In the US field study, one dog administered TRIFEXIS experienced a single mild seizure 2½ hours after receiving the second monthly dose. The dog remained enrolled and received four additional monthly doses after the event and completed the study without further incident.

Following concomitant extra-label use of ivermectin with spinosad alone, a component of TRIFEXIS, some dogs have experienced the following clinical signs: trembling/twitching, salivation/drooling, seizures, ataxia, mydriasis, blindness and disorientation. Spinosad alone has been shown to be safe when administered concurrently with heartworm preventatives at label directions.

In US and European field studies, no dogs experienced seizures when dosed with spinosad alone at the therapeutic dose range of 13.5-27.3 mg/lb (30-60 mg/kg), including 4 dogs with pre-existing epilepsy. Four epileptic dogs that received higher than the maximum recommended dose of 27.3 mg/lb (60 mg/kg) experienced at least one seizure within the week following the second dose of spinosad, but no seizures following the first and third doses. The cause of the seizures observed in the field studies could not be determined.

For technical assistance or to report an adverse drug reaction, call 1-888-545-5973. Additional information can be found at [www.TRIFEXIS.com](http://www.TRIFEXIS.com).

#### Post-Approval Experience (March 2012):

The following adverse reactions are based on post-approval adverse drug event reporting. The adverse reactions are listed in increasing order of frequency: vomiting, depression/lethargy, pruritus, anorexia, diarrhea, trembling/shaking, ataxia, seizures, hypersalivation, and skin reddening.

#### Effectiveness:

##### Heartworm Prevention:

In a well-controlled laboratory study, TRIFEXIS was 100% effective against induced heartworm infections when administered for 3 consecutive monthly doses. Two consecutive monthly doses did not provide 100% effectiveness against heartworm infection. In another well-controlled laboratory study, a single dose of TRIFEXIS was 100% effective against induced heartworm infections. In a well-controlled six-month US field study conducted with TRIFEXIS, no dogs were positive for heartworm infection as determined by heartworm antigen testing performed at the end of the study and again three months later.

##### Flea Treatment and Prevention:

In a well-controlled laboratory study, TRIFEXIS demonstrated 100% effectiveness on the first day following treatment and 100% effectiveness on Day 30. In a well-controlled laboratory study, spinosad, a component of TRIFEXIS, began to kill fleas 30 minutes after administration and demonstrated 100% effectiveness within 4 hours. In field studies conducted in households with existing flea infestations of varying severity, flea reductions of 98.0% to 99.8% were observed over the course of 3 monthly treatments with spinosad alone. Dogs with signs of flea allergy dermatitis showed improvement in erythema, papules, scaling, alopecia, dermatitis/pyodermitis and pruritus as a direct result of eliminating the fleas.

##### Treatment and Control of Intestinal Nematode Infections:

In well-controlled laboratory studies, TRIFEXIS was ≥ 90% effective in removing naturally and experimentally induced adult roundworm, whipworm and hookworm infections.

NADA #141-321, Approved by the FDA

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