

RESEARCH NOTE: A Profile of Lyme Nephritis

Lyme nephritis (LN) is seen in <1%–2% of Lyme-seropositive dogs. Coinfection with other tick-borne diseases may play a role. Diagnosis is challenging, as subclinical forms probably exist, and Lyme exposure may occur incidentally in dogs with PLN from other causes. Most Lyme-positive dogs do not develop proteinuria but should be screened and monitored. Diagnostic tests (eg, renal biopsy) should be performed early in suspected LN cases to help stage the disease and rule out other causes. Dogs with renal proteinuria that are Lyme positive should be treated for presumed LN with doxycycline: long-term antimicrobial therapy may be indicated. Immunosuppressant therapy may be warranted if active immune-complex disease is noted on renal biopsy. Whether to vaccinate for Lyme disease remains controversial because of vaccine efficacy and postvaccine adverse events, including possible immune-mediated sequelae in genetically predisposed dogs. Future investigation should target genetic markers to show that LN may actually be a cause of PLN and explore the role of coinfections with other organisms carried by *Ixodes* spp ticks.

Source

Lyme nephritis. Littman MP. *JVECC* 23:163-173, 2013.

Salivary Mucocele Excision: Proceed with Caution

Definitive treatment of salivary mucoceles involves surgical excision of the gland and associated ducts; percutaneous drainage remains a temporary palliative option with low potential for success. The conventional described lateral surgical approach can potentially leave residual glandular tissue from the polystomatic portion of the sublingual gland. An alternative technique has been proposed to offer more complete excision. This cadaveric study compared traditional lateral approach to tunneling under the digastric muscle in dogs, which was accomplished through a more laterally located skin incision following the angle of the mandible, then passing an instrument medial to the digastric muscle to grasp the duct for a more rostral transection. The median additional salivary duct length gain was 1.8 cm; this did not vary based on duct side or patient weight. Residual glandular tissue remained in only 2/15 tunneling procedures, compared with 100% of specimens using the conventional approach.

Commentary

Surgical excision of salivary mucoceles is

complicated by local vital structures of the ventral cervical region, sometimes obscured by massive saliva accumulation and associated tissue reaction. Long-term success is related to complete excision of all secretory glandular tissue. The mandibular and monostomatic portion of the sublingual salivary glands are easily identified, but the polystomatic portion of the sublingual gland extends a variable distance rostral along the secretory duct and may be responsible for recurrence. Although based on an ex-vivo model in dogs with normal salivary tissue, results suggested that the traditional approach results in inadequate excision. Alternatives include transection of or tunneling under the digastric muscle. However, a detailed understanding of the local neurovascular anatomy and delicate dissection skills are essential to success.—Jason Bleedorn, DVM, DACVS

Source

Tunneling under the digastric muscle increases salivary duct exposure and completeness of excision in mandibular and sublingual sialoadenectomy in dogs. Marsh A, Adin C. *VET SURG* 42:238-242, 2013.

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**).

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 anthelmintic 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, redose 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.

Post-Approval Experience (March 2012):

The following adverse reactions are based on post-approval adverse drug event reporting. The adverse reactions are listed in decreasing 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 98.8% 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 a 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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