



Clinical Assessment of the Recumbent Dog

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Complete assessment of a recumbent dog starts with the client's phone call to the practice. When a client describes a patient as recumbent, or "down," several careful screening questions can help determine the level of urgency and ensure the patient does not develop further injury caused by improper handling and management.

TEACHING TARGET

A RECUMBENT DOG REQUIRES THE WHOLE TEAM TO BE ON TARGET WITH COMMUNICATION, CARE TACTICS, AND STEPS TOWARD DIAGNOSIS.

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any problems can cause a recumbent presentation or inability to walk, including:

- Cardiac abnormalities
- General physical illness (metabolic or inflammatory) causing full-body weakness
- Intervertebral disc disease
- Orthopedic disease
- Severe obesity
- Spinal trauma
- Wobbler syndrome (common in large breeds).

Following is a suggested 7-step plan for assessing and treating a recumbent patient.

STEP 1 Phone History

When the client first calls the practice, a well-trained client service representative or veterinary nurse should discuss the patient's inability to walk. If the patient demonstrates obvious signs of pain, advise the client to restrain the patient as needed during transport to minimize the bite risk, and to keep the patient in a quiet, well-padded area. Client service team members and veterinary nurses are key in supporting the client and patient before arrival at the practice. Here are examples of questions that should be asked:

- *Has the patient experienced any known or suspected trauma?*
- *Is the pet in apparent pain or distress?*
- *Is the patient laterally recumbent and, if so, breathing normally?*
- *Are the patient's mucous membranes pink, bright red, or mud-colored?*

STEP 2 Complete Medical History

On patient arrival, the veterinary nurse should obtain a complete medical history to help identify the potential cause of the nonambulatory state. A full history, including general day-to-day care, incident reporting, vaccination status, nutrition, and activity, is necessary. Many modules are available online to support full history-taking (eg, [brief.vet/patient-history](#)).

Communication among the entire team and the client is key. The client must share details of the events that led to the recumbent status to avoid a presumptive diagnosis. The extra time taken to obtain a careful summary may affect the case's success.

STEP 3 Complete Physical & Neurologic Examinations

Physical and neurologic evaluations, when performed methodically, can help define and localize a lesion, determine if cardiovascular function is normal,

Steps for Assessing & Treating a Recumbent Patient

- 1 Phone History
- 2 Complete Medical History
- 3 Complete Physical & Neurologic Examinations
- 4 Minimum Database
- 5 Imaging
- 6 Communication Plan
- 7 Nursing Protocol.

assess body condition scoring, and assess for external parasites (eg, ticks causing paralysis) or trauma.

A full neurologic evaluation can also help determine the patient's ability to respond to touch and other stimuli. Spending an appropriate amount of time on this evaluation with the client present allows him or her to ask questions and to feel part of the team, which leads to fewer concerns about noncompliance and miscommunication.¹ In many cases, some of the top differentials for the patient's recumbency can be explored and discussed during this examination period to gauge the client's financial needs and ability to care for a recumbent dog.

Communication among the entire team and the client is key.

STEP 4 Minimum Database

All recumbent dogs should be evaluated with a minimum database (ie, CBC, serum chemistry panel, urinalysis) to assess general health.

Based on the physical and neurologic evaluations and laboratory findings, additional testing may be required. For example, an anemic patient who is too weak to rise will need more evaluation related to the cause of the anemia (eg, clotting time, abdominal ultrasound), whereas a neurologically recumbent dog will need the lesion to be localized and further imaging.

STEP 5 Imaging

Breed, age, and weight can support some of the top differentials for a recumbent patient; however, for example, do not assume that a nonambulatory dachshund has intervertebral disc disease. Some of the most common neurologic differentials include:

- Intervertebral disc disease (mostly seen in chondrodystrophoid breeds [eg, Bassett hounds, dachshunds])
- Wobbler syndrome (large-breed dogs [eg, Doberman pinschers, Great Danes])
- Atlantoaxial subluxation (toy breeds [eg, Maltese, Chihuahuas]).

If trauma is a concern, survey spinal radiographs may be the initial diagnostic choice. If neoplasia is higher on the list of differentials, chest radiographs and abdominal ultrasound are often the next steps. Advanced imaging (eg, magnetic resonance imaging, computed tomography, myelogram) typically will follow the base evaluation, depending on access to such imaging and the client's financial

position. Additional diagnostics may require sedation or anesthesia. Full-team understanding and discussion are essential.

STEP 6 Communication Plan

Success often rests on careful planning of the team's communication needs. Keeping the client service team informed of the patient's status,

Resources

- *A Practical Guide to Canine and Feline Neurology*. Dewey CW, ed. 2nd ed. Oxford, UK: Wiley-Blackwell; 2008.
- *BSAVA Manual of Canine and Feline Advanced Veterinary Nursing*. Moore AH, Rudd S, eds. 2nd ed. Quedgeley, UK: British Small Animal Veterinary Association; 2008.
- *BSAVA Manual of Canine and Feline Neurology*. Platt SR, Olby NJ, eds. 3rd ed. Quedgeley, UK: British Small Animal Veterinary Association; 2004.
- *BSAVA Manual of Canine and Feline Rehabilitation, Supportive and Palliative Care: Case Studies in Patient Management*. Watson P, Lindley S, eds. Oxford, UK: Wiley-Blackwell; 2011.
- *Canine Rehabilitation and Physical Therapy*. Millis D, Levine D, Taylor R, eds. Philadelphia, PA: Saunders; 2004.
- *Clinical Syndromes in Veterinary Neurology*. Braund KG, ed. 2nd ed. St. Louis, MO: Mosby-Elsevier; 1994.
- *Essentials of Small Animal Anesthesia & Analgesia*. Thurman JC, Tranquilli WG, Benson GJ, eds. 2nd ed. Oxford, UK: Wiley-Blackwell; 2011.
- *Functional Mammalian Neuroanatomy*. Jenkins TW, ed. Philadelphia, PA: Lea & Fibiger; 1972.
- *Fundamentals of Veterinary Clinical Neurology*. Bagley RS, ed. Ames, IA: Wiley-Blackwell; 2005.
- *Handbook of Veterinary Neurology*. Lorenz MD, Kornegay JN, eds. 4th ed. Philadelphia, PA: WB Saunders; 2004.
- *Handbook of Veterinary Pain Management*. Gaynor JS, Muir III WW, eds. 2nd ed. St. Louis, MO: Mosby-Elsevier; 2009.

even through computer updates, allows all involved in the chain of care to support the client and may prevent costly miscommunication.

Additionally, clients who are well-informed about the tests completed, the case's progression, and the expenses to date are likely to be satisfied with the care. A strong team plans for and executes communication practices through-

out the patient's management. For some difficult cases and cases with potentially poor outcomes, strong communication has resulted in a positive experience for the patient, client, and team.²

STEP **7** Nursing Protocol

All patients will need monitoring of basic vital signs, turning from side to side if they cannot do so them-

selves, passive-range-of-motion exercises, physical rehabilitation, and rigorous nursing care to prevent development of secondary problems associated with recumbency (eg, issues related to urine and fecal incontinence, pressure or decubital ulcer development from improper padding and rotation, respiratory complications if unable to maintain sternal recumbency).³

Management of the recumbent patient requires a full-team approach, including educating the owner, to prevent and minimize concerns. In the author's experience, such management is often critical and can shorten the patient's recovery time if managed well. On the other hand, poor management can increase the recovery time because the patient may develop secondary complications, as listed above.

Conclusion

As a veterinary nurse taking part in the management of hundreds of recumbent patients, astute observation, carefully developed patient care plans, team communication and coordination, and diligence in management until the patient can be independent again are the keys to a successful outcome. Some of the most profound and powerful experiences as a neurology nurse have occurred when patients were

- *Neurologic Examination of the Dog with Clinicopathologic Observations*. McGrath JT, ed. 2nd ed. Philadelphia, PA: Lea & Febiger; 1960.
- *Neurology for the Small Animal Practitioner (Made Easy Series)*. Chrisman C, Mariani C, Platt S, Clemmons R, eds. 1st ed. Jackson, WY: Teton NewMedia; 2002.
- Neuromuscular Diseases. Shelton D, ed. In: *The Veterinary Clinics of North America: Small Animal Practice*. Philadelphia, PA: WB Saunders; 32(1);2002.
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- *Practical Small Animal MRI*. Gavin PR, Bagley RS, eds. Oxford, UK: Wiley-Blackwell; 2009.
- *Small Animal Neurological Emergencies*. Platt S, Garosi L, eds. London, UK: Manson Publishing; 2012.
- *Saunders Solutions in Veterinary Practice: Small Animal Neurology*. Fitzmaurice SN, ed. Philadelphia, PA: Saunders-Elsevier; 2010.
- *Small Animal Spinal Disorders: Diagnosis and Surgery*. Sharp NJH, Wheeler SJ, eds. 2nd ed. St. Louis, MO: Elsevier-Mosby; 2005.
- *Veterinary Neuroanatomy and Clinical Neurology*. de Lahunta A, ed. 3rd ed. St. Louis, MO: Elsevier Science Health Science; 2004.
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recumbent for long periods of time but managed well, and they eventually walked out through the practice doors with their owners. The veterinary nurse's actions, as part of the entire veterinary team, can make the difference for these patients and clients. ■■■

References

1. *BSAVA Manual of Canine and Feline Advanced Veterinary Nursing*. Moore AH, Rudd S, eds. 2nd ed. Quedgeley, UK: British Small Animal Veterinary Association; 2008.
2. *BSAVA Manual of Canine and Feline Neurology*. Platt SR, Olby NJ, eds. 3rd ed. Quedgeley, UK: British Small Animal Veterinary Association; 2004.
3. *BSAVA Manual of Canine and Feline Rehabilitation, Supportive and Palliative Care: Case Studies in Patient Management*. Watson P, Lindley S. Oxford, UK: Wiley-Blackwell; 2011.



Veterinarians: Brush up on your neurologic examination technique when preparing to evaluate a recumbent dog.

Management Team: Clients who are well-informed are likely to be satisfied with their pet's care; be sure your practice has a strong communication plan in place for the entire team.

Nursing Team: Care for the recumbent patient should not focus solely on comfort—take the necessary measures to avoid complications related to incontinence, ulcers, respiratory complications, and other challenges associated with low mobility.

Client Care Team: Clients with recumbent patients may call about the status of the case; even if you are already busy and backed up, remember to be welcoming and to help the client as best as you can.

NexGard®
(afloxolaner) Chewables

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

Description:

NexGard® (afloxolaner) is available in four sizes of beef-flavored, soft chewables for oral administration to dogs and puppies according to their weight. Each chewable is formulated to provide a minimum afloxolaner dosage of 1.14 mg/lb (2.5 mg/kg). Afloxolaner has the chemical composition 1-Naphthalenecarboxamide, 4-[5-[3-chloro-5-(trifluoromethyl)-phenyl]-4,5-dihydro-5-(trifluoromethyl)-3-isoxazolyl]-N-(2-oxo-2-[(2,2,2-trifluoroethyl)amino]ethyl).

Indications:

NexGard kills adult fleas and is indicated for the treatment and prevention of flea infestations (*Ctenocephalides felis*), and the treatment and control of Black-legged tick (*Ixodes scapularis*), American Dog tick (*Dermacentor variabilis*), Lone Star tick (*Amblyomma americanum*), and Brown dog tick (*Rhipicephalus sanguineus*) infestations in dogs and puppies 8 weeks of age and older, weighing 4 pounds of body weight or greater, for one month.

Dosage and Administration:

NexGard is given orally once a month, at the minimum dosage of 1.14 mg/lb (2.5 mg/kg).

Dosing Schedule:

Body Weight	Afloxolaner Per Chewable (mg)	Chewables Administered
4.0 to 10.0 lbs.	11.3	One
10.1 to 24.0 lbs.	28.3	One
24.1 to 60.0 lbs.	68	One
60.1 to 121.0 lbs.	136	One
Over 121.0 lbs.	Administer the appropriate combination of chewables	

NexGard can be administered with or without food. Care should be taken that the dog consumes the complete dose, and treated animals should be observed for a few minutes to ensure that part of the dose is not lost or refused. If it is suspected that any of the dose has been lost or if vomiting occurs within two hours of administration, redose with another full dose. If a dose is missed, administer NexGard and resume a monthly dosing schedule.

Flea Treatment and Prevention:

Treatment with NexGard may begin at any time of the year. In areas where fleas are common year-round, monthly treatment with NexGard should continue the entire year without interruption.

To minimize the likelihood of flea reinfestation, it is important to treat all animals within a household with an approved flea control product.

Tick Treatment and Control:

Treatment with NexGard may begin at any time of the year (see **Effectiveness**).

Contraindications:

There are no known contraindications for the use of NexGard.

Warnings:

Not for use in humans. Keep this and all drugs out of the reach of children. In case of accidental ingestion, contact a physician immediately.

Precautions:

The safe use of NexGard in breeding, pregnant or lactating dogs has not been evaluated. Use with caution in dogs with a history of seizures (see **Adverse Reactions**).

Adverse Reactions:

In a well-controlled US field study, which included a total of 333 households and 615 treated dogs (415 administered afloxolaner, 200 administered active control), no serious adverse reactions were observed with NexGard.

Over the 90-day study period, all observations of potential adverse reactions were recorded. The most frequent reactions reported at an incidence of > 1% within any of the three months of observations are presented in the following table. The most frequently reported adverse reaction was vomiting. The occurrence of vomiting was generally self-limiting and of short duration and tended to decrease with subsequent doses in both groups. Five treated dogs experienced anorexia during the study, and two of those dogs experienced anorexia with the first dose but not subsequent doses.

Table 1: Dogs With Adverse Reactions.

	Treatment Group			
	Afloxolaner		Oral active control	
	N ¹	% (n=415)	N ²	% (n=200)
Vomiting (with and without blood)	17	4.1	25	12.5
Dry/Flaky Skin	13	3.1	2	1.0
Diarhea (with and without blood)	13	3.1	7	3.5
Lethargy	7	1.7	4	2.0
Anorexia	5	1.2	9	4.5

¹Number of dogs in the afloxolaner treatment group with the identified abnormality.

²Number of dogs in the control group with the identified abnormality.

In the US field study, one dog with a history of seizures experienced a seizure on the same day after receiving the first dose and on the same day after receiving the second dose of NexGard. This dog experienced a third seizure one week after receiving the third dose. The dog remained enrolled and completed the study. Another dog with a history of seizures had a seizure 19 days after the third dose of NexGard. The dog remained enrolled and completed the study. A third dog with a history of seizures received NexGard and experienced no seizures throughout the study.

To report suspected adverse events, for technical assistance or to obtain a copy of the MSDS, contact Merial at 1-888-637-4251 or www.merial.com/NexGard. For additional information about adverse drug experience reporting for animal drugs, contact FDA at 1-888-FDA-VETS or online at <http://www.fda.gov/AnimalVeterinary/SafetyHealth>.

Mode of Action:

Afloxolaner is a member of the isoxazoline family, shown to bind at a binding site to inhibit insect and acarine ligand-gated chloride channels, in particular those gated by the neurotransmitter gamma-aminobutyric acid (GABA), thereby blocking pre- and post-synaptic transfer of chloride ions across cell membranes. Prolonged afloxolaner-induced hyperexcitation results in uncontrolled activity of the central nervous system and death of insects and acarines. The selective toxicity of afloxolaner between insects and acarines and mammals may be inferred by the differential sensitivity of the insects and acarines' GABA receptors versus mammalian GABA receptors.

Effectiveness:

In a well-controlled laboratory study, NexGard began to kill fleas four hours after initial administration and demonstrated >99% effectiveness at eight hours. In a separate well-controlled laboratory study, NexGard demonstrated 100% effectiveness against adult fleas 24 hours post-infestation for 35 days, and was ≥ 93% effective at 12 hours post-infestation through Day 21, and on Day 35. On Day 28, NexGard was 81.1% effective 12 hours post-infestation. Dogs in both the treated and control groups that were infested with fleas on Day -1 generated flea eggs at 12- and 24-hours post-treatment (0-11 eggs and 1-17 eggs in the NexGard treated dogs, and 4-90 eggs and 0-118 eggs in the control dogs, at 12- and 24-hours, respectively). At subsequent evaluations post-infestation, fleas from dogs in the treated group were essentially unable to produce any eggs (0-1 eggs) while fleas from dogs in the control group continued to produce eggs (1-141 eggs).

In a 90-day US field study conducted in households with existing flea infestations of varying severity, the effectiveness of NexGard against fleas on the Day 30, 60 and 90 visits compared with baseline was 98.0%, 99.7%, and 99.9%, respectively. Collectively, the data from the three studies (two laboratory and one field) demonstrate that NexGard kills fleas before they can lay eggs, thus preventing subsequent flea infestations after the start of treatment of existing flea infestations.

In well-controlled laboratory studies, NexGard demonstrated >97% effectiveness against *Dermacentor variabilis*, >94% effectiveness against *Ixodes scapularis*, and >83% effectiveness against *Rhipicephalus sanguineus*, 48 hours post-infestation for 30 days. At 72 hours post-infestation, NexGard demonstrated >97% effectiveness against *Amblyomma americanum* for 30 days.

Animal Safety:

In a margin of safety study, NexGard was administered orally to 8 to 9-week-old Beagle puppies at 1, 3, and 5 times the maximum exposure dose (6.3 mg/kg) for three treatments every 28 days, followed by three treatments every 14 days, for a total of six treatments. Dogs in the control group were sham-dosed. There were no clinically-relevant effects related to treatment on physical examination, body weight, food consumption, clinical pathology (hematology, clinical chemistries, or coagulation tests), gross pathology, histopathology or organ weights. Vomiting occurred throughout the study, with a similar incidence in the treated and control groups, including one dog in the 5x group that vomited four hours after treatment.

In a well-controlled field study, NexGard was used concomitantly with other medications, such as vaccines, antihelmintics, antibiotics (including topicals), steroids, NSAIDs, anesthetics, and antihistamines. No adverse reactions were observed from the concomitant use of NexGard with other medications.

Storage Information:

Store at or below 30°C (86°F) with excursions permitted up to 40°C (104°F).

How Supplied:

NexGard is available in four sizes of beef-flavored soft chewables: 11.3, 28.3, 68 or 136 mg afloxolaner. Each chewable size is available in color-coded packages of 1, 3 or 6 beef-flavored chewables.

NADA 141-406, Approved by FDA

Marketed by: Frontline Vet Labs™, a Division of Merial, Inc.
Duluth, GA 30096-4640 USA

Made in Brazil.

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