香港獸醫專科服務

HONG KONG VETERINARY SPECIALTY SERVICES

Spinal Tumours in Dogs (and Cats)

Quick Take

Spinal tumours are **abnormal growths** that **press on the spinal cord, nerves, or bones of the spine**, causing **pain, weakness, or paralysis**.
They can be **primary** (originating in the spine) or **secondary** (spread from another site).

Dogs: spinal tumours are **uncommon** but serious — often seen in middle-aged to older pets.
Cats: spinal **lymphoma** is the most frequent type.

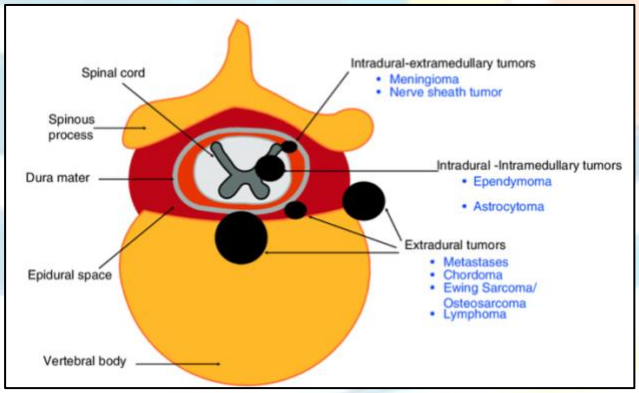
Surgery can **relieve spinal cord compression** and provide **diagnosis** and **pain relief**, often extending mobility and quality of life.

1) What's going on inside?

The spine has **three main tumour compartments**:

Location	What it means	Common tumour types
Extradural (outside spinal cord)	Between bone and cord	Vertebral bone tumours (osteosarcoma, chondrosarcoma), meningioma, lymphoma
Intradural-extramedullary (inside dura but outside cord)	Compresses spinal cord	Meningioma, nerve sheath tumour
Intramedullary (within the spinal cord)	Inside spinal cord tissue	Gliomas, ependymomas, rare metastases

Regardless of type, the **spinal cord doesn't tolerate pressure** — even slow-growing masses cause dysfunction as they compress or invade the nerves.



2) Common causes and types

In dogs

- **Meningioma** (tumour of the meninges covering the spinal cord)

- **Nerve sheath tumour** (arises from spinal nerve roots)
- Lymphoma
- Osteosarcoma, chondrosarcoma, hemangiosarcoma (bone-origin)
- Glioma, ependymoma (within spinal cord)
- Metastatic tumours (spread from elsewhere — e.g., mammary, prostate, hemangiosarcoma)

In cats

- **Lymphoma (**most common, especially FeLV- positive)
- **Meningioma**, osteosarcoma, and metastatic carcinoma less common

3) What owners notice

Early signs

- Mild weakness, wobbliness (ataxia)
- Reluctance to jump or climb stairs
- Pain (yelping when lifted, trembling)
- Stiff neck or back, arching
- Scuffing toenails when walking
- Changes in posture or head carriage

Later signs

- Progressive limb weakness or paralysis
- Incontinence (loss of bladder/bowel control)
- Pain unresponsive to medication
- Collapse or inability to walk
- Symptoms may progress slowly (weeks to months) or sometimes rapidly, depending on tumour type.

4) Diagnosis and staging

Step 1: Neurologic examination
Localizes which spinal segment is affected.

Step 2: Advanced imaging
- MRI — best for differentiating tumour type and spinal cord involvement.
- CT scan — excellent for bone tumours.
- Myelography (dye study) — older technique; still used if MRI unavailable.

Step 3: Tissue diagnosis
- Surgical biopsy or CT-guided needle biopsy for histopathology.
- CSF tap may detect abnormal cells (especially lymphoma).
- Thoracic/abdominal imaging to check for metastasis.

Step 2 and 3 are usually **combined under a same anaesthesia** in order to avoid several episodes under general anaesthesia

5) Treatment options

A) Medical / palliative management

Used for:

- Inoperable tumours
- Advanced metastasis
- Owners declining surgery

Goals: pain relief, reduce inflammation, preserve mobility.

- **Corticosteroids (prednisolone)** — decrease cord swelling, reduce symptoms
- **Pain medications** (NSAIDs, gabapentin, opioids)
- **Chemotherapy** for lymphoma or metastatic disease
- **Radiation therapy** — often highly effective for meningioma, nerve sheath tumors, or lymphoma
- **Rehabilitation therapy** for strength and mobility

Relieves symptoms
Rarely curative unless tumour is radiosensitive (e.g., lymphoma)

B) Surgery — mainstay for accessible tumours

Goal:

- Decompress the spinal cord (remove pressure)
- Remove or debulk tumour
- Obtain tissue **diagnosis**
- Stabilize the spine if needed

Common procedures

Approach	Description	Used for
Hemilaminectomy	Remove part of vertebral bone to access and relieve pressure	Extradural tumours (most common)
Dorsal laminectomy	Open top of spinal canal	Dorsal meningioma, intradural tumours
Vertebral body resection ± plating	Remove bone tumour, reconstruct spine	Osteosarcoma, chondrosarcoma
Debulking only	Partial removal to relieve compression	When complete excision unsafe
Stabilization (plates, screws, PMMA)	Prevent collapse post-resection	Large or unstable lesions

Complete removal may not always be possible, especially if the tumour invades critical structures.

6) Prognosis and outcomes

Tumour type	Typical surgical outcome	Median Survival (approx.)
Meningioma	Often excellent after surgery ± radiation	>2–3 years (many long-term survivors)
Nerve sheath tumour	Good to fair; recurrence possible	1–2 years; longer with radiation
Lymphoma (with chemo ± radiation)	Good; can achieve remission	6 months–2 years depending on form
Osteosarcoma / chondrosarcoma	Guarded (local control possible)	6–12 months median
Intramedullary glioma/ependymoma	Guarded to poor	Weeks–months unless slow-growing
Metastatic tumours	Palliative focus	Weeks–months

Cats:

Spinal lymphoma may respond dramatically to chemotherapy (remission months to years).
Meningiomas resected surgically often have excellent control (>2 years).

7) Complications and realistic rates

Complication	Approx. rate	Notes
Worsened neurologic function post-op	10–20%	Often transient; some permanent
Infection / wound dehiscence	5–10%	Managed with antibiotics
CSF leakage	<5%	May require re-closure
Haemorrhage during surgery	<5%	Controlled intraoperatively
Implant failure / instability	<5%	Rare with modern fixation
Tumour recurrence	20–50%	Depends on completeness of resection.
Death during/after surgery	2–8%	Higher in advanced or unstable cases

Radiation complications (if used): mild skin irritation, transient inflammation; serious effects rare (<5%).

8) Recovery and aftercare

In hospital

- Stay: 3–7 days (depending on surgery and recovery)
- Pain control, physiotherapy, bladder management
- Steroids tapered post-op

At home

- Strict rest for 4–6 weeks
- Use a harness, not a collar
- Physical therapy starts early: assisted standing, hydrotherapy, balance exercises
- Monitor for pain, weakness, or infection at incision site

Rechecks:

- 2 weeks (incision),
- 6 weeks (healing and neuro exam),
- then every **3–6 months** for imaging or radiation planning.

Dogs often **improve within 2–4 weeks**, though recovery varies by tumour type and pre-op status.

9) Radiation & chemotherapy

Meeting an oncologist will help you take the right next step decision once the diagnosis is confirmed.

Radiation: Often used post-op to kill residual tumour cells. Particularly effective for meningioma, nerve sheath tumours, lymphoma.

Chemotherapy: Mainly for lymphoma or as adjunct for metastatic disease.
Stereotactic radiation (SRT) is increasingly available — non-invasive, high precision, minimal side effects.

10) Prognostic factors (key takeaways)

Better outcomes with:

- Slow-growing, well-defined tumours (meningioma)
- Early surgical decompression before paralysis
- Complete or near-complete resection
- Post-op radiation therapy
- Good pain and rehab management

Guarded prognosis with:

- Intramedullary or metastatic disease
- Severe, prolonged paralysis before treatment
- Rapidly progressive bone tumours

11) Questions to ask your surgeon or neurologist

- What type and location of spinal tumour is suspected?
- Can we obtain a definitive diagnosis before surgery (biopsy/imaging)?
- What are the surgical goals — complete removal or decompression?
- Will stabilization or radiation be required afterward?
- What are the chances of walking again?
- What is the expected survival and quality of life for this tumour type?
- How often should rechecks or imaging be done?
- What are the potential complications (short- and long-term)?

12) Trusted veterinary references

- ACVS (American College of Veterinary Surgeons) — Spinal Tumours in Dogs and Cats
- VCA Hospitals: Spinal Cord Tumours Overview

- Fossum, T. (2020). Small Animal Surgery, 5th Ed. — spinal tumour surgery chapters
- Brisson BA, 2010. Vet Clin North Am Small Anim Pract: review of spinal disease and surgery
- Moore et al., 2013, Vet Surg: outcomes after spinal meningioma resection
- Rossmeissl et al., 2013, J Vet Intern Med: spinal cord neoplasia in dogs and cats
- Kippenes et al., 2020, Vet Radiol Ultrasound: MRI features and prognostic correlations

Bottom Line
Spinal tumours cause **progressive pain and weakness** due to cord compression.
Early diagnosis and **surgical decompression** offer the best chance for comfort and mobility.
Surgery + radiation yields **excellent control in meningioma and nerve sheath tumours**.
Median survival (Says at what time 50% of the population of treated patient is still alive): from months to years, depending on tumour type and completeness of removal.
Even when not curative, treatment can restore quality of life and function, giving pets more comfortable, meaningful time.