MULTIPLE CHOICE QUESTIONS

1. You have just examined a 10-year-old German Shepherd Dog who, in the last few days has become progressively more ataxic and paraparetic. It has absent proprioceptive paw placing in its pelvic limbs and has brisk pelvic limb spinal reflexes. It is focally painful over its cranial lumbar spine. What is the most likely diagnosis?
 - (A) Intervertebral disc herniation
 - (B) Degenerative myelopathy
 - (C) Ischaemic myelopathy
 - (D) Spinal arachnoid diverticulum
2. You have just examined a 4-year-old Border Collie who became suddenly paraparetic after chasing a tennis ball at the park. It has very good voluntary movement in its right pelvic limb and very little voluntary movement in its left pelvic limb. It has absent proprioceptive paw placing in both pelvic limbs, good patellar

reflexes in both pelvic limbs, but a poor withdrawal reflex on the left pelvic limb compared to the right. It is not apparently painful on palpation of its limbs or spine. What is the most likely diagnosis?

- (A) Type I intervertebral disc extrusion
 - (B) Acute non-compressive nucleus pulposus extrusion
 - (C) Spinal fracture/luxation
 - (D) Granulomatous meningomyelitis
3. You have just examined a 1-year-old Labrador Retriever that has been reluctant to exercise and yelping when touched for the last few days. Its physical and neurological examinations are unremarkable except marked neck pain and a temperature of 40.1°C. What is the most likely diagnosis?
 - (A) Granulomatous meningomyelitis
 - (B) Steroid-responsive meningitis–arthritis
 - (C) Intervertebral disc herniation
 - (D) Spinal arachnoid diverticulum

Caring for non-ambulatory patients: ethical considerations and more

Patrick Kenny

Veterinary surgeons are commonly presented with paralysed pet animals because of spinal cord injury (SCI), spinal neoplasia, degenerative myelopathy or other cause. The treatment of these animals, particularly their maintenance as pets if prognosis for functional recovery is poor, can give rise to ethical dilemmas and induce a degree of 'moral distress' in the owner and/or veterinary staff. However, some pets under certain circumstances appear to tolerate paralysis and can have a good quality of life (QOL).

Clinicians are accustomed to using structured approaches to solve clinical problems. A rigorous structured approach to defining the ethical issues at hand, consideration of ethical concepts alongside patient and owner factors, and application of practical strategies to minimize the impact of the decision may greatly assist the clinician in resolving ethical dilemmas and formulating acceptable treatment plans.

A sound understanding of clinical ethics can help clinicians identify, understand and resolve ethical issues in practice. Most ethical issues can be resolved satisfactorily; competing goods are not usually problematic, competing harms or losses are more challenging, where

the best choice may be the 'least bad option'. The latter case may be considered a true 'dilemma' — not just a difficult choice, but a choice between two or more undesirable alternatives. A framework for solving ethical problems may distinguish ethical dilemmas from more unremarkable ethical issues.

Many practical approaches to resolving ethical dilemmas have been developed. Recurring components include:

- Establishing the medical facts: diagnosis, prognosis and co-morbidities. A frequently cited maxim amongst clinical ethicists asserts 'good ethics relies on good facts'
- Establishing what the ethical issues are, and their relative importance
- Establishing the concerns, values and preferences of the patient (or surrogate, or owner), shared decision making and obtaining valid consent
- Establishing what practical considerations must be addressed to minimize the impact of the decision.

The welfare of the animal should be the core consideration in resolving clinical–ethical dilemmas in veterinary medicine, taking primacy over all other concerns.

There are many factors that may impact the QOL of an animal (and owner of an animal) with paralysis, including: size, age, breed, species, temperament, underlying disease process, location of lesion (para- or tetraparesis), severity of paresis/paralysis, sensory deficits, urinary and faecal continence, co-morbidities, resultant change in lifestyle and ability to perform normal behaviours, and level and quality of rehabilitation and nursing care.

Strategies must be implemented to mitigate the physical and psychological impact of paralysis. Adequately caring for a paralysed pet requires considerable medical and nursing support. Urinary tract infections are

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highly prevalent. Adequate bedding and vigilant skin care are necessary to decrease the occurrence of decubital ulcers. Physical therapy can facilitate social interaction, maintain the pet-owner bond, improve client education and support therapy at home. Use of a wheel-cart enables mobility and the opportunity to perform more normal behaviours.

KEY LEARNING OBJECTIVES

- Understand that the welfare of the animal should be the core consideration in resolving clinical-ethical dilemmas in veterinary medicine
- Recognize that a structured approach may greatly assist the clinician in resolving ethical dilemmas and formulating treatment plans
- Understand that good nursing and medical care, physiotherapy and other assistance strategies to facilitate more normal behaviours can help to minimize the impact of paralysis and associated morbidities

MULTIPLE CHOICE QUESTIONS

1. How is a dilemma best defined?
 - (A) A problem with no easy solution
 - (B) A choice between two or more undesirable options
 - (C) A vicious circle
 - (D) A difficult decision to be made
2. The ancient maxim *primum non nocere* (above all, do no harm) defines which bioethical concept?

(A) Autonomy	(C) Beneficence
(B) Non-maleficence	(D) Justice
3. Which ethical theory would define the morality of an act solely by analysis of its consequences?

(A) Utilitarianism	(C) Bioethics
(B) Deontology	(D) Beneficence

Geriatric neurology: diseases in an ageing population

Patrick Kenny

The neurological examination of an older animal must be interpreted with care; many have residual neurological deficits from pre-existing neurological problems (either known or suspected). A thorough medical history aids in interpreting such findings. Otherwise neurologically normal older dogs may also have abnormalities on examination, such as decreased patellar reflexes or a high-frequency pelvic limb tremor while standing, which are usually benign and incidental. Similarly, care must be taken in interpreting diagnostic tests, particularly broad and highly sensitive tests, such as magnetic resonance imaging (MRI), where the possibility of overinterpreting findings is high unless the clinical problem and diagnostic question are well defined in advance.

The incidence of many neurological diseases increases with age, and as pets are living longer, many are being more and more commonly encountered in practice.

Cerebrovascular disease is being increasingly recognized as a problem in older dogs and cats, in many cases being predisposed by other conditions that themselves have an increased incidence with age, such as hyperadrenocorticism, hyperthyroidism, hypertension and renal disease and neoplasia. The incidence of brain and spinal neoplasia similarly increases with age.

Cognitive dysfunction syndrome in dogs and cats is caused by a degenerative brain disease similar to Alzheimer's disease in humans. Clinical signs include disorientation, changed social interactions, alterations in sleep/wake cycle, house soiling and change in activity. Diagnosis is based on a consistent history and ruling out other conditions that may cause similar signs. Advanced imaging findings of the brain may be highly suggestive. Treatments used with variable success include selegeline, propentophylline and/or dietary modification to assist with apparent cognitive function, and melatonin and/or sedatives to assist with sleep/wake disturbances. Medical conditions that may exacerbate signs should be identified and addressed where possible.

As pets with (often multiple) chronic diseases are living longer, clinicians must be able to identify and discuss quality-of-life issues with the owners so as to provide optimal palliative care.

KEY LEARNING OBJECTIVES

- Understand that the incidence of many neurological diseases increases with age and many neurological conditions are being increasingly encountered due to improved diagnosis and availability of diagnosis, and the increasing age of many of our pets
- Be aware that geriatric patients often have neurological examination abnormalities due to age-related or incidental pre-existing conditions
- Learn that care must be taken in interpreting diagnostic imaging in older patients