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

MULTIPLE CHOICE QUESTIONS

1. You have been presented with a 12-year-old dog who in the last week has changed in behaviour, being increasingly dull and intermittently agitated. For the last 2 days it has been compulsively pacing with a strong tendency to circle to the left. Which of the following diseases is the most likely explanation for these signs?

(A) Cognitive dysfunction
(B) Cerebrovascular disease
(C) Hepatic encephalopathy
(D) A brain tumour

2. Which of the following findings is not consistent with idiopathic/geriatric vestibular syndrome?

(A) Acute-onset head tilt
(B) Corneal reflex deficit on the same side as the head tilt
(C) Horizontal nystagmus, fast phase in the opposite direction to the head tilt
(D) Increased limb-extensor tone on the side of the body opposite the head tilt

3. Which of the following measurements on MRI has been found to be significantly smaller in dogs with canine cognitive dysfunction (CCD) compared to dogs without CCD?

(A) Interthalamic adhesion thickness
(B) Corpus callosal length
(C) Ventricular volume
(D) Pituitary height to brain area ratio