MULTIPLE CHOICE QUESTIONS

1. When monitoring a patient with intracranial pathology, what is the most important factor to monitor?
(A) Segmental spinal reflexes
(B) Proprioception
(C) Cranial nerves
(D) Spinal pain
2. When should a dog be able to urinate after presenting paraplegic and having decompressive spinal surgery?

- (A) If nociception is present
(B) If voluntary movement is seen
(C) If the perineal reflex is present
(D) If it can stand
3. What should you monitor in a cat after status epilepticus?
(A) Ability to urinate
(B) Seizures
(C) Vision
(D) All of the above

Nursing the neuromuscular patient

Natalie Roper

Neuromuscular disease is a relatively common neurological presentation and requires specific nursing considerations. These diseases reduce the ability of an animal's skeletal muscle to work correctly, leading to a reduction in mobility and sometimes the ability to breathe in severe cases. There are three main neuromuscular diseases seen in canine patients: polyradiculoneuritis, myasthenia gravis and polymyositis. This lecture will discuss each of these diseases in turn, the clinical signs and symptoms, patient presentation, investigations and the specific nursing considerations. We will then examine the most common complications that arise with these patients and how we can effectively manage these cases.

- Polyradiculoneuritis is an autoimmune disease that attacks the axons of the nerve cells, particularly the nerve roots. It causes patients to present with paralysis
- Myasthenia gravis is a disease that attacks the neuromuscular junction, causing reduction in transmission of the impulse, which reduces the muscles ability to sustain a muscular contraction
- Polymyositis affects the muscle itself and causes weakness and muscle atrophy.

The main complications to consider for patients with neuromuscular disease are aspiration pneumonia, muscular contractures and pressure sores. Each one of these complications requires intensive and specific nursing care and some patients will develop these complications in addition to other systemic disease processes. This makes nursing these patients challenging but rewarding.

- Aspiration pneumonia is the inhalation of stomach contents into the lungs and leads to bacterial infection. As nurses there are many things that we

can do to help reduce the risk of this occurring, for example turning, feeding balls of soft food from a height while keeping the patient elevated, and physiotherapy

- Muscular contracture requires intensive physiotherapy to prevent it developing further. This is something that needs to be discussed with the owners as it requires long-term dedication
- Pressure sores develop due to recumbency and inactivity. As nurses it is our role to ensure that this is prevented as much as possible. To do this we can turn the patient regularly and perform physiotherapy multiple times daily.

Neuromuscular patients can be tricky and complicated to nurse, but with the correct knowledge and incentive to care for these patients, they can be some of the most rewarding patients to nurse back to health.

KEY LEARNING OBJECTIVES

- Understand the three main neuromuscular disorders
- Understand the main complications that can arise in neuromuscular patients
- Understand how we nurse and care for neuromuscular patients

MULTIPLE CHOICE QUESTIONS

1. What are the three main complications for patients with neuromuscular disease?
(A) Pain, incontinence, pressure sores
(B) Aspiration pneumonia, pressure sores, incontinence
(C) Muscle contractures, aspiration pneumonia, pressure sores
(D) Incontinence, muscle contractures, pressure sores
2. Which neuromuscular disease affects the neuromuscular junction?
(A) Polymyositis
(B) Polyradiculoneuritis

Guest (guest)

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- (C) Tick paralysis
(D) Myasthenia gravis
3. If a patient has developed aspiration pneumonia, what is the most appropriate method of feeding?
- (A) Balls of soft food fed from a height with the patient remaining raised after finishing

- (B) Soft food from a bowl on the floor then raising the patient once they have finished eating
- (C) Dry food fed from a height, patient is not kept raised
- (D) Dry food from a bowl on the floor and patient is never raised

What nurses need to know about inflammatory brain disease

Raquel Trevail

MUA includes a variety of neurological disorders in both dogs and cats. It generally involves more than one part of the central nervous system and the presenting neurological signs can localize to a specific area of the brain or present with multifocal signs. Inflammatory brain diseases can also be further divided into infectious and non-infectious, with non-infectious aetiologies being more common than infectious aetiologies.

MUA is secondary to an immune-mediated response where the body 'fights' itself. No specific trigger has been identified and a genetic background is found in some breeds. The presenting clinical signs vary depending on which areas are affected and can vary from solely lethargy, to seizures, multifocal neurological signs to coma. The spinal cord can be affected in some cases and, in these, subsequent neurological signs such as pain or changes in gait can be seen.

The diagnosis of inflammatory non-infectious disease is generally achieved with advanced imaging, preferably magnetic resonance imaging (MRI) due to its increased sensitivity, and cerebrospinal fluid (CSF) analysis when safe to perform. The latter is only recommended following advanced imaging as most cases are associated with changes in intracranial pressure. Serology for infectious diseases and polymerase chain reaction on the CSF can be considered to investigate infectious aetiologies.

Treatment depends on the initial complaint, cause and severity of neurological deficits. In non-infectious MUA, immunosuppressive therapy is required. Monotherapy or combination therapy can be chosen. There is no proven superior treatment or combination of treatments and therefore the choice is made on experience with certain drugs, severity of presentation, the need for monitoring and associated costs. The aim is for the patient to return to normal and to achieve control with the lowest dose of medication possible. It is rare for patients to be cured, and therefore long-term therapy is the realistic expectation. It is possible to discontinue medication in some cases without relapses but, on the

other hand, some cases will deteriorate despite aggressive therapy. It is not possible to predict the response to treatment and therefore trial treatment is generally recommended. Without treatment, the prognosis is poor and survival times are short.

While in hospital the care required depends on the severity of the clinical signs. It is important to remember that the severity of the signs may or may not be related to prognosis. Certain presentations, such as severe changes in mental status and lack of gag reflex, are more likely to be associated with complications such as aspiration pneumonia that can also compromise recovery. Close monitoring in these cases is paramount to establish response to treatment, and correct information at time of discharge is essential for a successful management.

KEY LEARNING OBJECTIVES

- Meningoencephalitis of unknown aetiology (MUA) refers to a variety of neurological disorders and therefore the clinical presentation can vary
- Recognize that there is a breed predisposition to each type of MUA but any breed can be affected
- Understand that treatment and prognosis vary depending on the underlying aetiology but a definitive diagnosis can only be achieved by brain biopsy or postmortem examination

MULTIPLE CHOICE QUESTIONS

1. Which breed is necrotizing leukoencephalitis more likely to be seen in?
(A) Pugs (C) Yorkshire Terriers
(B) Chihuahuas (D) Jack Russell Terriers
2. What is the best test/tests to perform to reach a diagnosis of MUA?
(A) MRI only
(B) CSF only
(C) DNA test
(D) MRI, CSF analysis and serology
3. A 2-year-old, neutered male Pug presented with seizures. A diagnosis of MUA was reached by means of MRI and CSF analysis. Cytarabine was started in hospital. How long should the owners be careful with urine and faeces?
(A) 1 month (C) 2 weeks
(B) 3 days (D) 1 week