



Australian and New Zealand College of Veterinary Scientists

Membership Examination

June 2014

Small Animal Surgery Paper 1

Perusal time: **Fifteen (15)** minutes

Time allowed: **Two (2)** hours after perusal

Answer **ALL FOUR (4)** questions

Answer **FOUR** questions each worth 30 markstotal 120 marks

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Paper 1: Small Animal Surgery

Answer all four (4) questions

1. Answer **all** parts of this question:
 - a) List the tendons that comprise the common calcaneal tendon. (3 marks)
 - b) Name and draw **three (3)** suture patterns commonly used for tenorrhaphy. (6 marks)
 - c) Describe the process of tendon healing following surgical apposition with minimal (less than one millimetre) gap. (10 marks)
 - d) State the approximate strength (expressed as a percentage of original tendon strength) attained in a surgically repaired tendon by:
 - i. six weeks following repair (1 mark)
 - ii. twelve months following repair. (1 mark)
 - e) Discuss appropriate post-operative management and rehabilitation of a 30 kg dog following surgical repair of a common calcaneal tendon rupture. Include the rationale behind each recommendation. (9 marks)

2. Discuss the pathoanatomy and pathophysiology of gastric dilatation-volvulus (GDV).

In your answer consider the sequence of events that results in dilatation and volvulus of the stomach (7 marks) and the specific pathophysiological consequences that GDV has on the circulatory (8 marks), gastrointestinal (9 marks) and respiratory systems (4 marks) as well as systemic effects (2 marks).

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3. Answer **all** parts of this question:

- a) List the major types of burn injuries experienced in small animals (2 marks) and explain the basis by which burns cause damage to tissue (2 marks).
- b) Describe the common classification system of burns used in small animal patients. (5 marks)
- c) Explain the 'rule of nines' in relation to burn injuries. (3 marks)
- d) An adult male entire Labrador retriever is brought to your clinic following a house fire. He has sustained major burns to approximately 30% of body surface area and is suffering from smoke inhalation.
Discuss the pathophysiology of these injuries. Consider both local (8 marks) and systemic (10 marks) effects. You may use diagrams to illustrate your answer.

4. Answer **all** parts of this question:

- a) List **four (4)** proposed aetiological factors for canine osteoarthritis. (2 marks)
- b) The pathogenesis of canine osteoarthritis involves changes to the cartilage, synovium, synovial fluid, subchondral bone and nervous system. Describe the macroscopic and microscopic changes seen in articular cartilage. Include in your answer a brief discussion of the mediators of osteoarthritis. (9 marks)
- c) Damaged hyaline cartilage is typically replaced by fibrocartilage. Describe how hyaline cartilage and fibrocartilage differ in structure and function. (5 marks)
- d) List the approximate differential cell count, expressed as percentages of mononuclear cells and neutrophils, that would typically be found in synovial fluid aspirated from **each** of the following diseased canine joints. You may wish to present your answers in the form of a table. (6 marks)
 - i. osteoarthritis
 - ii. immune-mediated polyarthritis
 - iii. septic arthritis.

Question 4 continued over page

- e) Briefly discuss **both** of the following:
- i. the proposed mechanisms of action for non-steroidal anti-inflammatory drugs (NSAIDs) (*4 marks*)
 - ii. potential adverse effects of NSAIDs, including reference to the mechanisms by which these occur in **two (2)** named organs. (*4 marks*)

End of paper



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Paper 2

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Answer **ALL FOUR (4)** questions

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Paper 2: Small Animal Surgery

Answer all four (4) questions

1. A seven-year-old male entire German shepherd dog is presented to your clinic with a three-day history of lethargy and anorexia. On physical examination, he is febrile (40.4°C) and has a large, painful and fluctuant prostate. You suspect a prostatic abscess.

Answer **all** parts of this question:

- a) Prostatic infections are uncommon in dogs. List the urinary defence mechanisms that normally prevent the development of prostatic infections. (2 marks)
- b) Describe the appropriate pre-surgical management of this case, including any additional diagnostic procedures warranted. (9 marks)
- c) You elect to perform prostatic omentalisation. Describe the technique of prostatic omentalisation, including any ancillary procedures you wish to perform. You may use labelled diagrams if you wish. (10 marks)
- d) Describe the properties of the omentum that allow this technique to be successful. (3 marks)
- e) List **three (3)** alternative procedures that may be used to treat prostatic abscessation. (3 marks)
- f) State which empiric antibiotics would be appropriate for this case. Include your reasoning for this selection. (3 marks)

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2. An eight-year-old male golden retriever presents to your clinic with a raised, non-pigmented, firm three centimetre diameter mass arising from the gingiva in the rostral third of the left maxilla that has grown over the last two months.

Answer **all** parts of this question:

- a) List the **four (4)** most common malignant oral tumours in dogs, in order from most to least common, stating the approximate percentage incidence for **each**.
(4 marks)
 - b) List the **two (2)** most common oral tumours in cats. (2 marks)
 - c) Describe the appropriate diagnostic approach to investigate the described mass prior to any definitive treatment. (8 marks)
 - d) The histopathology report describes the mass as a low grade fibrosarcoma. Given the patient signalment and case history, describe the suspected biological characteristics of this tumour. (3 marks)
 - e) Briefly outline the preferred treatment option in this case. (1 mark)
 - f) Describe the technique for this treatment, including relevant landmarks.
(10 marks)
 - g) Discuss the prognosis for oral fibrosarcomas in dogs. (2 marks)
3. A five-year-old female neutered border collie presents to your clinic 24 hours after a road traffic accident. She is non-weight-bearing on the left forelimb but otherwise well. Radiographs of this limb demonstrate a lateral luxation of the antebrachium relative to the humerus.

Answer **all** parts of this question:

- a) Describe, using labelled diagrams, the functional anatomy of the normal canine elbow, including relevant neural structures. (12 marks)
- b) Explain why the majority of traumatic elbow luxations are lateral luxations - ie the radius and ulna luxate laterally relative to the humerus. (1 mark)

Question 3 continued over page

- c) Describe how to perform a closed reduction of a lateral elbow luxation. Include any subsequent management in your answer. *(9 marks)*
- d) Closed reduction is unsuccessful in this case. Briefly describe the surgical approach to the elbow that would permit open reduction of this luxation. Do not discuss surgical fixation. *(4 marks)*
- e) List **four (4)** potential long-term complications of chronic elbow luxation. *(2 marks)*
- f) Briefly describe how the anatomical features of the feline elbow and distal humerus differ from the canine elbow and distal humerus. *(2 marks)*

4. A two-year-old female toy poodle presents to you with a two-week history of neck pain with moderate ataxia and paresis affecting all four limbs.

Answer **all** parts of this question:

- a) Contrast the expected neurological examination findings for a spinal cord lesion that localises to C1-C5 with findings expected for a C6-T2 spinal cord lesion. *(6 marks)*
- b) List **six (6)** differential diagnoses that could account for a C1-C5 lesion in this case. *(3 marks)*
- c) Radiography, computerised tomography (CT), and magnetic resonance imaging (MRI) are frequently used to image the canine spine when a myelopathy is suspected. Discuss the relative strengths and weaknesses of **each** of these modalities for imaging the spine. *(9 marks)*
- d) Describe the typical radiographic findings encountered with an atlanto-axial subluxation. *(3 marks)*
- e) List the primary stabilisers of the atlanto-axial joint. *(3 marks)*
- f) Discuss conservative management of atlanto-axial subluxation. Briefly describe when conservative management is indicated. *(6 marks)*

End of paper