



Australian and New Zealand College of Veterinary Scientists

Membership Examination

June 2016

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) Describe how you would perform a neurologic examination of the peripheral nervous system in a dog presented for evaluation of gait disturbance.

You **do not** need to refer to cranial nerve evaluation or mentation in your answer.

Your answer should include reference to:

- musculoskeletal palpation (2 marks)
- gait and posture (4 marks)
- postural reactions (4 marks)
- spinal reflexes (8 marks)
- nociception testing. (2 marks)

Provide a brief description of how you would perform **each** component of the examination. Include what you would consider to be the 'normal' response to **each** test.

b) Describe with the aid of a diagram the reflex arc for the patella reflex and the normal response. (5 marks)

c) Explain the difference between a withdrawal reflex and a nociceptive response and how you would interpret them. (5 marks)

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

- a) List the **four (4)** most likely differential diagnoses for a male dog with haematuria and non-productive stranguria. (2 marks)
- b) List the abnormalities likely to be seen on serum biochemistry in a patient with non-productive stranguria which has persisted for more than 24 hours. (3 marks)
- c) State the clinical cardiac abnormalities which may be seen in this patient. (2 marks)
- d) Describe the underlying cause of these cardiac abnormalities. (1 mark)
- e) List the **two (2)** most likely components of a urolith in a dog and the expected urine pH characteristics for **each**. (4 marks)
- f) Describe the layered structure of the bladder wall and identify which layer(s) contributes most to the strength of surgical closure. (4 marks)
- g) Name the anatomical landmarks which define the trigone. (2 marks)
- h) State why the lateral ligaments of the bladder should be identified and avoided during surgery. (1 mark)
- i) Describe an appropriate closure method for the bladder. Include in your answer the time taken for mucosal defects to heal and for full tissue strength to be regained in the bladder after cystotomy incision. (2 marks)
- j) List **five (5)** risk factors for recurrence of calcium oxalate uroliths. In what percentage of cases would calcium oxalate urolithiasis be expected to recur following surgical removal? (5 marks)
- k) Discuss the management strategies available to reduce recurrence of calcium oxalate uroliths. (4 marks)

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3. The principles of surgery as described by Halstead are as relevant today as they were over 100 years ago. List the **six (6)** surgical principals attributed to Halstead and describe how they can be applied in surgery. *(30 marks)*
4. Answer **all** parts of this question:
- a) Define the term osteochondrosis and osteochondritis dissecans (OCD), and describe the processes that lead to the development of OCD in dogs. You may wish to use a diagram. *(15 marks)*
 - b) List **five (5)** proposed aetiologic mechanisms for OCD in dogs. *(5 marks)*
 - c) List all the joints that can be affected by OCD in dogs and the specific site within the joint that the OCD lesion is most commonly found. *(10 marks)*

End of paper



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Paper 2

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Answer **ALL FOUR (4)** questions

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

Paper 2: Small Animal Surgery

Answer all four (4) questions

1. A 10-year-old male neutered German shepherd dog is presented to your clinic in a collapsed state. The owners reported that he has been lethargic but had eaten a meal a few hours prior to presentation. At presentation the dog is recumbent, depressed and has a large distended abdomen. His mucous membranes are pale, capillary refill time (CRT) delayed, and his peripheral pulses are weak. He is tachycardic and tachypnoeic.

Answer **all** parts of this question:

- a) What is your initial assessment of this patient, include a problem list and a list of differential diagnoses. (3 marks)
- b) Describe (in point form) your immediate approach to emergency stabilisation and immediate diagnostic evaluation of this patient and justify your answer. (5 marks)
- c) On abdominal ultrasound examination you discover a peritoneal effusion – discuss how you would investigate and determine the nature of this effusion.

Include in your answer the following information:

- i. Describe and appropriate technique to collect or sample the fluid. (2 marks)
- ii. List the types of effusion that may accumulate in a body cavity and identify the clinical pathology features of **each**. Give an example of a typical cause for **each** of these fluid types. (6 marks)
- iii. List and briefly describe further diagnostic tests which can be performed to determine the nature/origin of the peritoneal fluid. (7 marks)
- d) You determine that there is haemoabdomen resulting from a ruptured splenic mass.
Describe in point form your approach to the further management of this patient up until the time of surgery. Include any preoperative investigations and assessments. Briefly summarise any discussion you would have with the owner prior to surgery regarding the possible disease process and complications of surgery – include the most likely differential diagnosis based on presentation and signalment. (5 marks)

Question 1 continued over page

- e) What vascular anatomy must be preserved when performing suture ligation of the major splenic vessels during a splenectomy? (1 mark)
- f) Based on a post-surgical histologic diagnosis of splenic hemangiosarcoma what prognosis would you give the owner for this dog following surgery alone or surgery with further treatment. Answer in brief point form. (1 mark)

2. You are presented with a 10-month-old spayed female Labrador retriever dog with a 4-month history of an intermittent bilateral forelimb lameness. Physical examination reveals bilateral elbow pain.

Answer **all** parts of this question:

- a) List the **four (4)** conditions/components that make up canine elbow dysplasia. (4 marks)
- b) Which components of elbow dysplasia would be most likely to be present in this patient based on the breed? (2 marks)
- c) List **four (4)** diagnostic modalities reported to be of use in diagnosing canine elbow dysplasia. (4 marks)
- d) Which modality or combination of modalities is considered the most sensitive and specific for the diagnosis of canine coronoid process disease? (2 marks)
- e) Outline **two (2)** relevant treatment options for canine coronoid process disease. Include in your answer the reasoning/justification for **each** treatment and the expected outcome in the short and long term for **each** treatment. (10 marks)
- f) Name the separate ossification centre of the proximal ulna at the level of the elbow joint that fails to fuse in some dogs **and** identify the age by which fusion normally occurs. (2 marks)
- g) Discuss the condition known as incomplete ossification of the humeral condyle (IOHC). (6 marks)

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3. Brachycephalic dogs often present with exercise intolerance and upper respiratory noise.

Answer **all** parts of this question:

- a) List the primary anatomic abnormalities that can be seen in brachycephalic dogs. *(2 marks)*
- b) Discuss how these anatomical abnormalities lead to brachycephalic obstructive airway syndrome (BAOS). Include in your answer a discussion of altered alveolar function. *(13 marks)*
- c) Describe or draw the **three (3)** stages of laryngeal collapse and their appearance during laryngoscopy. *(3 marks)*
- d) The following questions all relate to your management of a 10-month-old female French bulldog that presents with respiratory distress, cyanosis and hyperthermia (rectal temperature 41.5°C). During the examination she regurgitates.

Answer **all** parts of the following:

- i. Describe how you would initially assess and stabilise this patient. *(3 marks)*
- ii. List **three (3)** classes of drugs you would consider using to manage this patient's gastrointestinal signs and state why it is required. Provide **one (1)** specific example from **each** drug class. *(3 marks)*
- iii. What are the most common complications of surgery for uncomplicated BOAS *(2 marks)*? Given the hyperthermia present on initial presentation list **four (4)** systemic sequellae could occur in this patient *(4 marks)*.

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

- a) Briefly describe **each** of the factors that are considered to predispose to canine cruciate ligament disease. *(12 marks)*
- b) Describe in point form, the advantages and disadvantages to the use of an extracapsular suture stabilisation technique in a 35 kg overweight Labrador dog with complete rupture to the cranial cruciate ligament. *(6 marks)*
- c) List **two (2)** tibial osteotomy techniques that can be used for management of cranial cruciate ligament disease. *(1 mark)*
- d) For **each** technique listed in 4 c) briefly describe, with the use of a diagram, the biomechanical mechanism by which the stifle is stabilised during the weight bearing stance phase. *(5 marks)*
- e) Name the **two (2)** most common types of meniscal injuries associated with canine cruciate disease and discuss why, in terms of the anatomy and function of the canine stifle joint, these are the most common. *(6 marks)*

End of paper