



Australian and New Zealand College of Veterinary Scientists

Fellowship Examination

June 2017

Small Animal Surgery Paper 1

Perusal time: **Twenty (20)** minutes

Time allowed: **Three (3)** hours after perusal

Answer **ALL FOUR (4)** questions

All four questions are of equal value.

Answer **FOUR (4)** questions each worth 45 marks.....total 180 marks

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Paper 1: Small Animal Surgery

Answer all four (4) questions

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

- a) Draw a diagram that shows the macroscopic arterial blood supply to the stomach and upper and lower intestines. Write short notes, as needed, to explain your diagram. Describe the primary differences between the arterial and venous anatomy in this region. *(10 marks)*

- b) Describe the aetiology and pathophysiology of ureteral obstruction in the cat. *(10 marks)*

- c) List the anatomical defects that may lead to incontinence in the dog. Briefly describe the embryological events relating to urinary tract development, indicating abnormalities that may cause these defects. *(9 marks)*

- d) Discuss the reported accuracy of techniques used to diagnose ectopic ureters in the dog. *(8 marks)*

- e) Describe the reported complications of devices used to manage ureteral obstruction in the cat and dog. *(8 marks)*

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2. Laparoscopic surgery is less invasive than traditional open surgery, but carries unique risks.

Answer **all parts** of this question:

- a) Identify the step in the laparoscopic procedure that has the highest incidence of complications. *(1 mark)*
- b) Briefly discuss intra-operative surgical complications that can occur during laparoscopic procedures. Indicate the incidence of these complications. *(5 marks)*
- c) Identify and describe the technical details of techniques available to minimise complications during laparoscopy. *(8 marks)*
- d) During laparoscopic surgery, CO₂ is used to insufflate the abdomen to create room for surgical manipulation. This insufflation can cause complications by **two (2)** mechanisms.

Answer **all parts** of this sub-question:

- i. Identify the **two (2)** mechanisms by which CO₂ insufflation can cause complications, and briefly describe the pathogenesis of **each**. *(6 marks)*
 - ii. Describe appropriate patient monitoring to identify these complications and discuss techniques that minimise patient risk. *(6 marks)*
- e) Several approaches for laparoscopic prophylactic gastropexy have been described in the veterinary literature. List the different techniques reported. Compare and contrast the technical aspects (procedural details, skills and materials required) and complication rates between **two (2)** of the reported techniques. *(12 marks)*
- f) SILS and SPAS are acronyms for a relatively new modification of the minimally invasive surgical technique. Define **either** acronym and describe the differences in this newer technique compared to traditional minimally invasive surgery. *(7 marks)*

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

- a) Describe the pathogenesis of osteoarthritis (OA) in dogs. Include in your answer both the macroscopic and microscopic changes, as well as a description of cytokine mediators, where appropriate. *(18 marks)*
- b) Discuss outcome measures for assessment of osteoarthritis treatments in dogs and cats. *(15 marks)*
- c) List **four (4)** accepted treatments for osteoarthritis, their mechanism of action for the treatment of osteoarthritis, and the evidence available to support their use. Refer to evidence available for the treatment of cats in **one (1)** of your responses. *(12 marks)*

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

- a) Describe the process of free skin engraftment for a meshed free skin graft in a dog. *(20 marks)*
- b) List and explain the causes of skin graft failure, including the mechanism(s) by which they fail. *(5 marks)*
- c) Discuss, with reference to the published literature, the role of negative pressure wound therapy (NPWT) in the management of free skin grafts. Include in your answer the proposed mechanisms by which NPWT may influence the causes of graft failure. *(14 marks)*
- d) Discuss the effects of vascular endothelial growth factor on skin graft survival. *(6 marks)*

End of paper



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Paper 2: Small Animal Surgery

Answer all four (4) questions

1. A one-year-old castrated male Labrador retriever is referred to your practice 24 hours after being in a motor vehicle accident. He has already had appropriate emergency diagnostics and initial treatment at the referring veterinary clinic. He has been diagnosed with a unilateral craniodorsal hip luxation.

Answer **all** parts of this question:

- a) Identify the primary and secondary stabilisers of the coxofemoral joint in the dog. Differentiate the structures that must be disrupted to permit craniodorsal luxation and briefly describe the mechanical forces applied to the coxofemoral joint to result in craniodorsal luxation. *(10 marks)*
- b) List the indications for open or closed reduction of the coxofemoral joint as a definitive treatment for craniodorsal coxofemoral luxation in a dog. *(5 marks)*
- c) Compare and contrast **two (2)** accepted surgical techniques for the management of canine craniodorsal coxofemoral luxation. The technique, complication rate and clinical outcome should be discussed in your answer and references provided, where appropriate. *(12 marks)*
- d) Transarticular pinning has been described as an open technique for stabilising coxofemoral luxations in dogs and cats. Describe the technique and give **three (3)** advantages and **three (3)** disadvantages of the technique. Cite references to support your statements. *(10 marks)*
- e) Describe risk factors for hip luxation after total hip replacement. *(8 marks)*

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2. A seven-year-old male entire Pug presents with acute collapse, dyspnoea and cyanosis. The dog has a history of chronic, intermittent regurgitation.

Answer **all parts** of this question:

- a) Describe the recommended acute management of this patient. *(7 marks)*
 - b) List anatomic and physiologic abnormalities described in association with brachycephalic airway syndrome, providing references to the literature, where appropriate. *(13 marks)*
 - c) Discuss surgical management options of brachycephalic airway syndrome, the proposed mechanism of these procedures, and the associated prognosis. *(16 marks)*
 - d) Describe, with the aid of diagrams, if needed, the classification of hiatal hernias. *(4 marks)*
 - e) Discuss treatment options and the prognosis for management of hiatal hernias in dogs affected by brachycephalic airway syndrome. *(5 marks)*
3. A six-year-old female, spayed Dachshund presents with an acute inability to use its hind limbs. Nociception is absent to the digits of the hindlimbs and tail. Neuroanatomical localisation indicates a myelopathy affecting the T3-L3 neuroanatomic segment.

Answer **all parts** of this question:

- a) List differential diagnoses for this dog and state your most likely diagnosis. *(3 marks)*
- b) Describe and justify your recommended initial assessment and management of this case. *(15 marks)*
- c) With reference to the literature, discuss the diagnostic investigation of this dog's clinical signs and provide prognostic factors, where appropriate. *(15 marks)*
- d) List and discuss the evidence for the surgical therapies available for treatment of the most likely differential diagnosis in this case. *(12 marks)*

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4. A six-year-old male Golden Retriever presents with a rapidly enlarging, soft, fluctuant, adherent mass on the right forelimb, just proximal to the radiocarpal joint. He has no other detectable comorbidities. Fine needle aspirate identifies a spindle-cell tumour.

Answer **all parts** of this question:

- a) List the possible differential diagnoses. *(4 marks)*
- b) List the common biological characteristics of the group of tumours classified as soft tissue sarcomas. *(4 marks)*
- c) Histopathological results from an incisional biopsy have confirmed a grade 3 soft tissue sarcoma. Describe the possible treatment options for this patient. Discuss the reported success of **each** of these treatment options. *(12 marks)*
- d) Surgical excision of this sarcoma has resulted in incomplete margins on histopathology. Discuss the clinical factors reported to affect the local recurrence of soft tissue sarcomas after surgical excision. *(15 marks)*
- e) A one-year-old Burmese cat presents with a vaccine-associated sarcoma in the interscapular region. The mass has undergone previous excisional biopsy. Discuss curative intent surgery of this disease in this location. *(10 marks)*

End of paper