

# CASE STUDY 10

## Cat with Cardiomyopathy

### INSTRUCTIONS

Carefully read the scenario and answer the following questions. Responses should be concise, yet contain sufficient detail to completely answer each question. Submitted answers must be legibly written or typed; illegible documents will be returned to the student. Documents submitted electronically must be in an instructor approved format. All resources required to complete this assignment can be found immediately following case questions.

### SCENARIO

Juniper, a 9-year-old, 8 lb. Maine Coon cat was presented with a history of dyspnea, anorexia and lethargy. Physical examination revealed pale mucous membranes, CRT 3 seconds, TPR 101.5 °F, 130 bpm, 35 bpm. A significant systolic cardiac murmur and adventitious lung sounds were noted on thoracic auscultation. The veterinarian ordered a complete blood count, biochemistry profile, thoracic radiographs, ECG and an echocardiogram.

### QUESTIONS

1. The blood for the CBC and chemistry profile was collected from the cephalic vein. Identify the location of this vessel. (1 Point)
2. You brought the cat to the treatment area to obtain an ECG. After placing the cat in right lateral recumbency, you attach ECG leads at the following locations:
  - Caudal distal triceps muscle (right and left side)
  - Cranial distal quadriceps muscle (right and left side)
  - Left lateral chest wallPlease diagram the locations of the lead attachments. (2 Points)
3. While attaching the leads you explain to the assistant that an ECG functions to evaluate cardiac impulse propagation. Please list the normal sequence of cardiac activation. (2 Points)
4. The cat's heart rate is 130 bpm. Is this value within the normal range? What is the difference between heart rate and heart rhythm? (2 Points)
5. A systolic murmur was noted upon physical examination. Does this mean that the noise is heard during cardiac contraction or relaxation? During which of these phases is the heart filling with blood? (2 Points)

Name \_\_\_\_\_ Score \_\_\_\_\_ /20 Points

6. During the echocardiogram, the veterinarian mentions that the ventricular walls are thickened and the cat likely has a reduced ejection / stroke volume. Please identify the four cardiac chambers and describe how stroke volume is affected by end diastolic and end systolic volume. (2 Points)
7. After examining the cat, your evaluation of the patient includes an assessment of decreased perfusion. Please describe the correlation between decreased perfusion and cardiomyopathy. (Hint: Consider stroke volume.) (2 Points)
8. Based upon ultrasound and ECG results, the veterinarian diagnoses hypertrophic cardiomyopathy. Please define the terms hypertrophic and cardiomyopathy. (2 Points)
9. You are auscultating the heart when Juniper's owner enters the room. She asks, "How do you know where to listen?" Please describe the heart's normal anatomical position and the location for optimal perception of cardiac sounds (Points of Maximum Intensity) to Juniper's owner. (2 Points)
10. The veterinarian is concerned that a thromboembolism may occur secondary to the hypertrophic cardiomyopathy. Juniper's owner asks, "What is a thromboembolism?" Please explain. (1 Point)
11. During Juniper's hospitalization, a thromboembolism occurred. The occlusion is in the left external iliac artery. Please diagram the location of this artery for Juniper's owner. (2 Points)

## REFERENCES

Colville, T., Bassert, J., (2007) *Clinical Anatomy and Physiology for Veterinary Technicians 2nd ed.* St. Louis, MO, Mosby.

"Merck Veterinary Manual Online." 2008 Merck & Co., Inc. <http://www.merckvetmanual.com>

Rockett, J., Lattanzio, C., Anderson, K., (2009) *Patient Assessment, Intervention and Documentation for the Veterinary Technician.* Clifton Park, NY, Delmar Cengage Learning.

Crow, S., Walshaw, S., Boyle, J., (2009) *Manual of Clinical Procedures in Dogs, Cats, Rabbits and Rodents 3rd ed.* Wiley-Blackwell.