FACULTY	HEALTH SCIENCES AND VETERINARY MEDICINE		
SCHOOL	VETERINARY MEDICINE		
SUBJECT	VETERINARY DIAGNOSTIC IMAGING		
SUBJECT CODE	V3721CD		
DATE	JUNE 2024		
DURATION	2 HOURS	**MARKS**	100

FIRST OPPORTUNITY EXAMINATION

Examiners: Dr. A Herbert
Internal Moderator: Dr. L. De Villiers
External Moderator: Dr. A Celliers

Instructions

1. Please answer all the questions on the examination paper provided.
2. Write your student number clearly on each page.
3. Answer ALL the questions.
4. Any form of malpractice is unacceptable.
5. **This paper consists of 14 pages, including the cover sheet.**

QUESTION 1 (5 marks)

Examine the radiograph IMAGE 1 and answer the questions below:

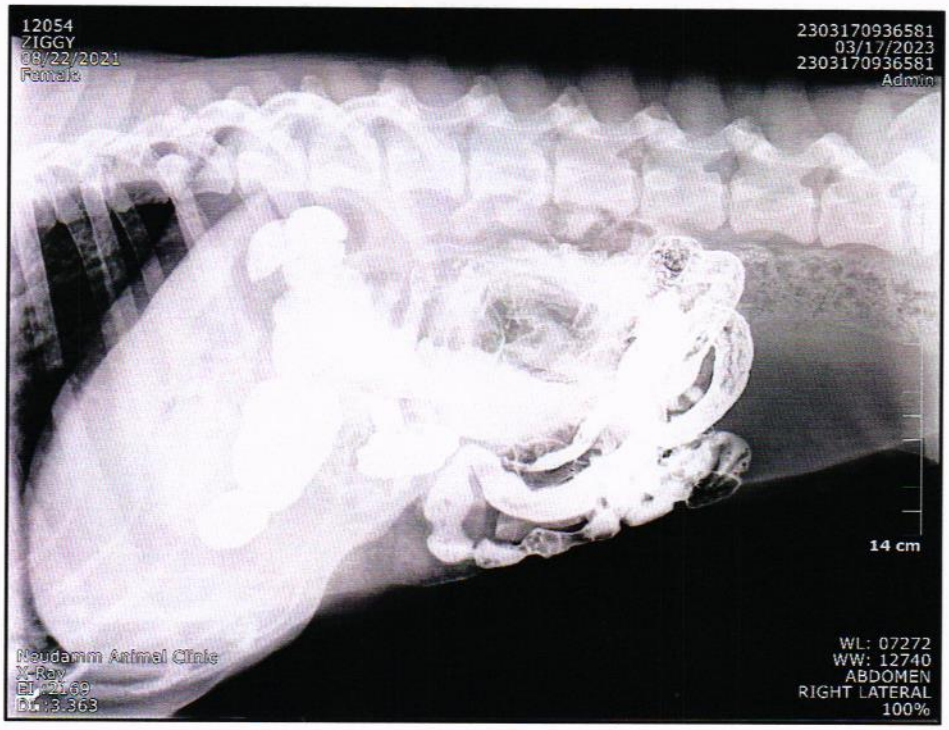


Image 1

1.1. Name the kind of study that was done in IMAGE 1 (1 mark).

1.2. Name the agent used in the study in IMAGE 1 (1 mark).

1.3. Explain the main clinical indication for the study in IMAGE 1, be specific (2 marks).

1.4. Describe the main situation in which such a study is contraindicated (1 mark).

QUESTION 2 (24 marks)

Examine the radiograph IMAGE 2 and answer the questions below:



Image 2

2.1. Name the body part radiographed (1 mark).

2.2. Name the radiographic view depicted in IMAGE 2 (2 marks).

2.3. Describe the landmarks for collimation of the radiograph IMAGE 2 (3 marks).

2.4. Evaluate the radiograph in IMAGE 2:
a) Provide the radiological description for the pathology seen (1 mark).

b) Explain why your answer in (a) would occur and name 2 (TWO) tissues that may lead to this occurrence (5 marks).

c) Explain the most probable cause for the radiological change seen, in this specific case (2 marks).

2.8. Describe the ideal time in the respiratory cycle that this kind of radiograph should be taken. Justify your answer (3 marks).

2.9. Describe what radiographic technique is used for this part of the body and what this technique generates (3 marks).

2.10. Explain the reasons for using this technique for this part of the body (2 marks).

2.11. Describe the exposure factors used in this technique (2 marks).

QUESTION 3 (10 marks)

Examine the radiograph IMAGE 3 and answer the questions below:



Image 3

3.1. Name both the body part and view depicted in this radiograph IMAGE 3 (2 marks).

3.2. Name the standard views for the body part in IMAGE 3 (2 marks).

3.3. Name the species depicted in IMAGE 3. Justify your answer (2 marks).

3.4. Explain if the standard orientation for viewing is observed in IMAGE 3. Justify your answer (1 mark).

3.5. Describe the collimation landmarks for the body part in radiograph IMAGE 3 (2 marks).

3.6. Explain what view is further needed to provide a more comprehensive radiographic diagnosis (1 mark).

QUESTION 4 (6 marks)

Examine the radiograph IMAGE 4 and answer the questions below:



Image 4

4.1. Name 3 (THREE) criteria for evaluation of bone changes as observed in the radiograph IMAGE 4 (3 marks).

4.2. Determine if the bone lesion observed in the radiograph IMAGE 4 is aggressive or non-aggressive. Justify your answer according to 2 (TWO) of these criteria (3 marks).

QUESTION 5 (15 marks)

Examine the components IMAGES 5 and 6 and answer the questions below:

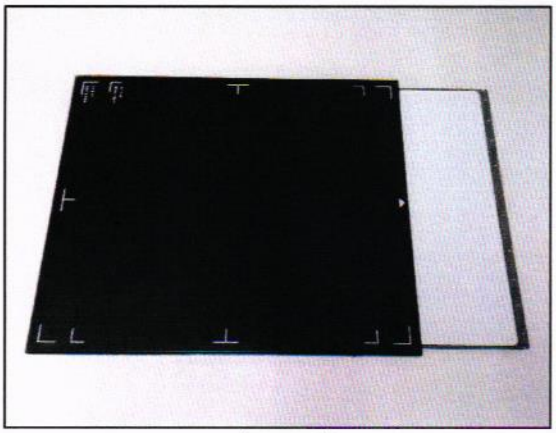


Image 5



Image 6

5.1. Name the component depicted in IMAGE 5 and name the radiography technique which uses this component (2 marks).

5.2. Name the component depicted in IMAGE 6 and name the radiography technique which uses this component (2 marks).

5.3. Name 2 (TWO) advantages and 1 (ONE) disadvantage of the technique named in 5.2. compared to the technique named in 5.1. (3 marks).

5.4. Explain how the contrast optimization provided by digital radiography may increase technician exposure (3 marks).

5.5. Name 5 ways to reduce personnel exposure through radiation safety (5 marks).

QUESTION 6 (7 marks)

Examine the radiograph IMAGE 7 and answer the questions below:

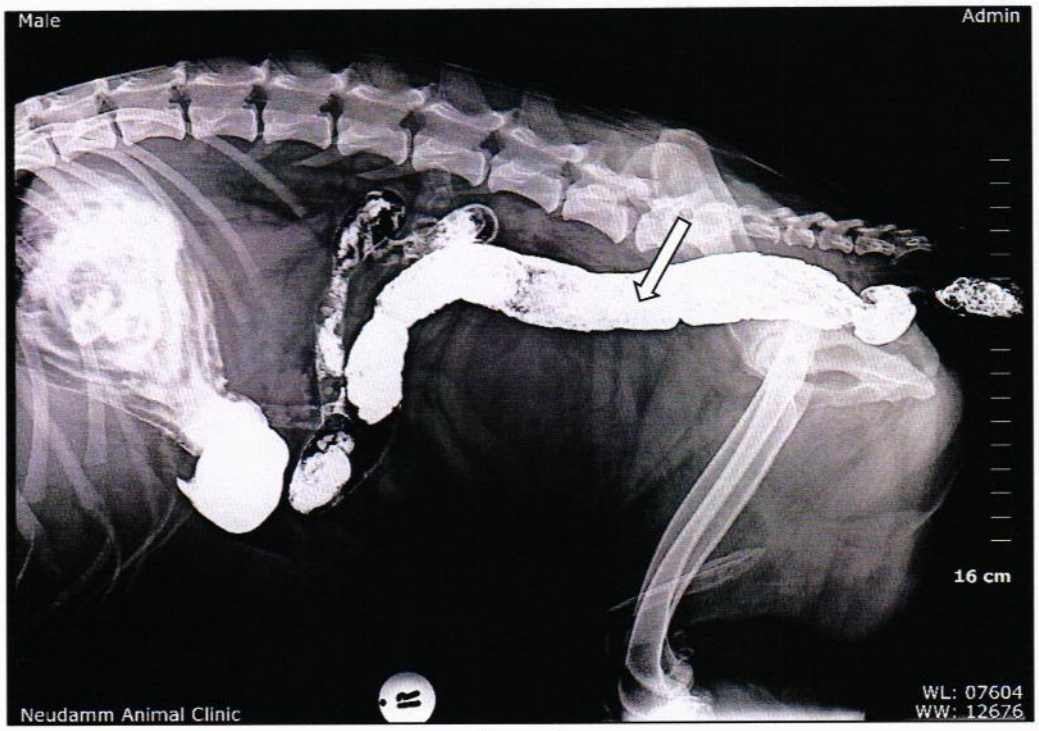


Image 7

6.1. Describe the radiographic exposure in IMAGE 7 (1 mark).

6.2. Explain the process for evaluating the need to change the exposure factors (3 marks).

6.3. Describe how you would adjust the exposure factors to yield a better-quality radiograph IMAGE 7 (2 marks).

6.4. Name the opacity of the medium indicated by the arrow in IMAGE 7 (1 mark).

QUESTION 7 (8 marks)

Examine the ultrasound IMAGE 8 and answer the questions below:

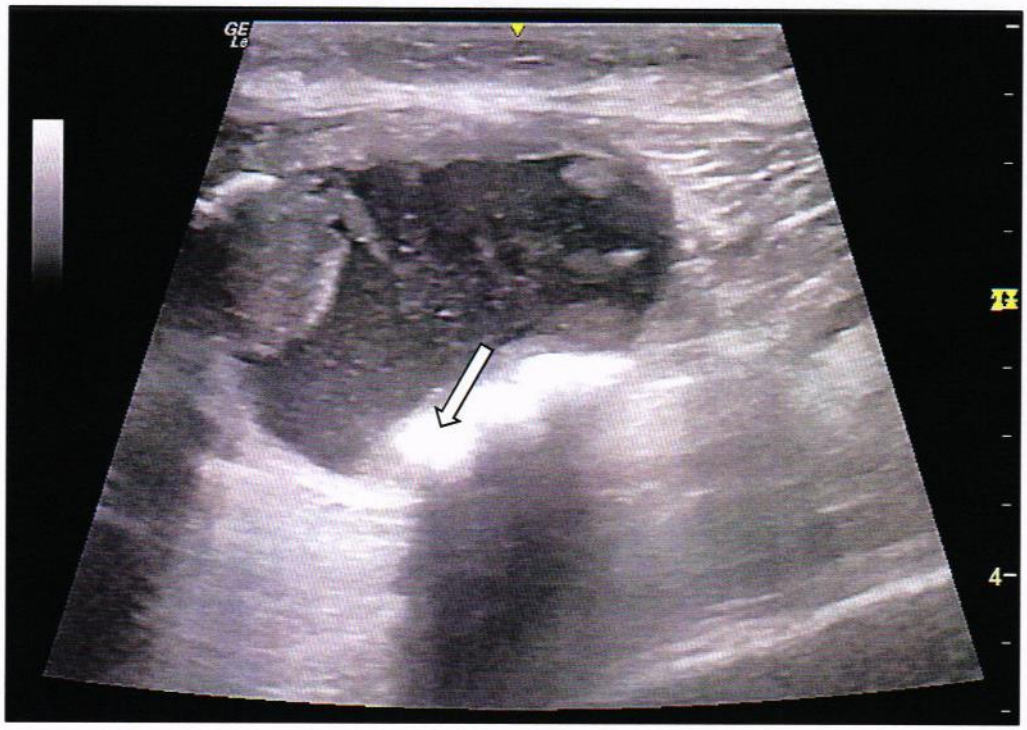


Image 8

7.1. Name the organ in IMAGE 8 (1 mark).

7.2. Describe the echogenicity of the organ in IMAGE 8 (1 mark).

7.3. Name the medium represented by the echogenicity in the organ in IMAGE 8 (1 mark).

7.4. Name the echogenicity of the structure indicated by the arrow in IMAGE 8 (1 mark).

7.5. Name the artefact in IMAGE 8 (1 mark).

7.6. Explain the production of the artefact in IMAGE 8 (2 marks).

7.7. Name the structures indicated by the arrow in IMAGE 8 (1 mark).

QUESTION 8 (6 marks)

A patient is presented after being hit by a car. Examine the ultrasound IMAGE 9 and answer the questions below:



Image 9

8.1. Name the diagnostic imaging technique depicted in IMAGE 9, performed immediately at presentation to evaluate the patient (2 marks).

8.2. Explain the main goal of the imaging technique in IMAGE 9 (1 mark).

8.3. Name the view of the technique illustrated in IMAGE 9 (1 mark).

8.4. Score the view in IMAGE 9. Justify your answer (2 marks).

QUESTION 9 (12 marks)

Examine the ultrasound IMAGE 10 and answer the questions below:



Image 10

9.1. Name 3 ultrasound modes and their principal use, respectively (6 marks).

9.2. Name the probe best suited to evaluate the organ in IMAGE 10, in a large breed dog. Justify your answer (4 marks).

9.3. Name the organ depicted in IMAGE 10. Justify your answer (2 marks).

QUESTION 10 (4 marks)

Explain why it is necessary to take both right lateral and left lateral views for thoracic radiographs to ensure an accurate radiographic diagnosis (4 marks).

QUESTION 11 (3 marks)

11.1. Explain the main advantage of scintigraphy compared to radiography (1 mark).

11.2. Name the 2 (TWO) main advantages of CT/MRI imaging compared to radiography (2 marks).

End of paper