C-VDI.4 Large Animal Diagnostic Imaging (A)

Credits: 10 (100 hours)

Provider: Veterinary Postgraduate Unit – Institute of Veterinary Science

RCVS Content Covered

The following outlines the modular content as set out by the RCVS.

At the end of the module, candidates should be able to:

- Recognise **faults due to defects in processing and film handling**, and deficiencies in film identification; recognise problems relating to density, contrast and sharpness, due to inadequate radiographic procedure; and recognise, from films, deficiencies in radiation safety procedures.
- Recognise and describe **normal radiographic anatomy** – candidates should possess a detailed knowledge of the relevant normal radiographic anatomy of the horse and its variation with breed and age.
- Apply the **principles of radiological interpretation** – the recognition of tissue types; formation of shadowgraphs; effects of superimposition and multiple shadows. Changes in opacity, size, shape, position and function of organs. The use of simple positional and contrast aids to elucidate radiographic problems. The applications of these basic principles to the evaluation of radiological signs in relation to clinical problems of the distal limb and head of the horse.
- Understand the principles of and apply **diagnostic ultrasonography** to problems affecting the musculoskeletal system of the distal limb.

Aim of the Module

The aim of this module is to develop a logical, systematic and reasoned approach to large animal diagnostic imaging of the distal limbs and head as part of their overall investigation of a case in a practice environment;

To enable the candidate to critically evaluate their own standards of practice and develop strategies for continuous improvement in the future.

Learning Outcomes

At the end of the module, candidates should be able to:

1. demonstrate ability to apply the principles of radiological and ultrasonographic interpretation to the evaluation of radiological or ultrasonographic signs in relation to clinical problems in large animal cases involving the head or distal limb;
2. develop the skills and knowledge in order to apply diagnostic techniques appropriately as part of the overall investigation of a case;

3. develop the ability to critically appraise their current diagnostic imaging technique, and to improve on their technique with experience;
4. critically evaluate the literature in order that evidence based medicine underpins their decision making processes.

Module Structure

The syllabus will be divided into 4 study units

Study Unit 1 – The Equine Head

- Recognition and description of normal radiographic anatomy - including age related variation (review from C –DVI.1)
- Common abnormalities affecting the skull, jaw, sinus, nasal cavities, teeth, guttural pouch, hyoid apparatus, pharynx and larynx.
- Advanced imaging of the equine head -ultrasonography, CT and MRI of the equine head

Study Unit 2 – The Foot and Pastern

- Radiography of the equine foot and pastern to include the following subject areas:
- Recognition and description of normal radiographic anatomy -including age related variation (review from C –DVI.1)
- Common abnormalities affecting bones and joints Fractures, dislocations, inflammatory and degenerative conditions. Congenital and developmental abnormalities, metabolic disorders. Trauma. Differential diagnoses.
- Familiarity with the general principles of contrast examinations and the performance and interpretation of the more commonly used techniques.
- Ultrasonography of the equine pastern and foot. The principles of ultrasonography and, in particular, its application to soft tissue problems of the distal limb of the horse.
- Advanced imaging of the equine foot and pastern - MRI and Scintigraphy of the equine foot and pastern (clinical applications)

Study Unit 3 – The fetlock and Metacarpus/tarsus

- Radiography of the fetlock and Metacarpus/tarsus Recognition and description of normal radiographic anatomy - including age related variation (review from C –DVI.1)
- Common abnormalities affecting bones and joints Fractures, dislocations, inflammatory and degenerative conditions. Congenital and developmental abnormalities, metabolic disorders. Trauma.
- Differential diagnoses Familiarity with the general principles of contrast examinations (for example in cases of suspected joint sepsis)
- Ultrasonography of the equine distal limb (excluding the pastern) The principles of ultrasonography and, in particular, its application to soft tissue problems of the distal limb of the horse.
- Advanced imaging of the fetlock and Metacarpus/tarsus MRI and Scintigraphy of the equine fetlock and Metacarpus/tarsus (clinical applications)

Study Unit 4 – The carpus and tarsus

- Radiography of the carpus and tarsus Recognition and description of normal radiographic anatomy - including age related variation (review from C –DVI.1)

- Common abnormalities affecting bones and joints Fractures, dislocations, inflammatory and degenerative conditions. Congenital and developmental abnormalities, Trauma. Differential diagnoses
- Familiarity with the general principles of contrast examinations (for example in cases of suspected joint sepsis)
- Ultrasonography of the equine carpus and tarsus Advanced imaging of the carpus and tarsus MRI and Scintigraphy (clinical applications)

Assessment Strategy

Portfolio of cases (50 case log book), 3 x reflective case reports (1500 words each), 1 x short answer question and/or MCQ test and 1 x journal critique/journal club presentation (pass/fail).

PLEASE NOTE**:** It is your responsibility to ensure that you have access to sufficient appropriate cases where you were the primary decision maker to produce adequate material for the module. This may not be possible with some internship positions. You must also be aware of any limitations of your facilities that may make the accumulation of appropriate cases difficult or impossible.