

C-SAS.7 Small Animal Orthopaedic Surgery (B)

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.

The areas to be covered should include the following:

Basic science

- Understanding of anatomy and physiology of joints
- Understanding of anatomy and physiology of muscle, tendon and ligaments

Joint disease

- Understand the aetiology, pathogenesis and treatment of:
 - Osteoarthritis
Candidates should be familiar with the treatment options including the use of drugs, nutraceuticals and physical therapies.
 - Osteochondrosis (Shoulder, elbow, stifle and hock)
 - Immune-mediated joint disease
Candidates should be familiar with the classification of these diseases
 - Infective arthritis
 - Tumours arising from and affecting joints

Investigation

- Investigation of joint disease including analysis of synovial fluid and the synovial lining
Candidates should be capable of interpreting synovial fluid cytology
- Interpretation of haematology, biochemistry and serology (ANA, RF and Borrelia) results relevant to joint disease.
- Principles and application of arthroscopy
Candidates will not be expected to have had any practical experience of this technique

Imaging

- Radiography (plain and contrast) of joints
- Principles and application of CT, MRI, scintigraphy and ultrasound where relevant to joint disease.

Treatment- general

- Surgical anatomy of joints

Candidates should be familiar with the relevant surgical anatomy of the shoulder, elbow, carpus, hip, stifle and hock joints.

- Diagnosis and management of fractures and luxations of joints
- Arthrodesis- indications and techniques

Candidates will be expected to understand the indications for arthrodesis of all joints but expected to have knowledge of the techniques applicable only to the carpus and tarsus. Candidates will not be expected to have knowledge of the techniques of shoulder, elbow or stifle arthrodesis

Treatment -Specific joint disorders

Candidates will be expected to have knowledge of the aetiology, diagnosis and treatment of the following disorders:

TMJ

- Dysplasia and bone disorders affecting TMJ

Shoulder joint

- Muscle/tendon disorders causing shoulder lameness
- OCD

Elbow joint

- Elbow dysplasia- aetiology, pathogenesis, treatment, genetics and control schemes
- Incomplete ossification of the humeral condyle
- Elbow replacement
(Candidates will not be expected to have knowledge of the surgical technique)

Carpus

- Ligamentous injuries

Hip joint

- Hip dysplasia and Perthes disease: Aetiology, pathogenesis, diagnosis and treatment. Genetics of hip dysplasia and control schemes
- Hip replacement (cemented and cementless systems-
(candidates will not be expected to have knowledge of the surgical technique for these procedures)

Stifle joint

- Patellar instability
- Disorders of the cruciate ligaments. Treatment options including tibial osteotomies
(Candidates will not be expected to have practical experience of these techniques)
- Meniscal injuries
- Ligament disorders (lateral and medial collateral and straight patellar ligament)
- Disorders of the muscles and tendons arising adjacent to the joint
- OCD

Hock joint

- OCD

- Shear injuries

Muscle and tendon injuries

- Grading of severity of muscle and tendon injuries
- Clinical signs and classification of muscle and tendon injuries
- Treatment of muscle and tendon injuries (*Candidates should have a good understanding of the general principles of treatment and have specific knowledge of Achilles tendon injuries*)
- Clinical signs and treatment of muscle contractures (infraspinatus, quadriceps)

Aim of the Module

The aim of this module is to develop in depth understanding of the principles of tissue healing and the physiological consequences of surgery on all body systems, and an ability to critically appraise current working practices with regard to preparation and management of the orthopaedic patient, the surgical environment, staff and instruments. It is anticipated that the information gained in this module be used to modify working practices and upgrade to 'best practice' techniques.

Learning Outcomes

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

1. demonstrate a systematic understanding of the anatomical, physiological, immunological and pathological processes involved in orthopaedic disease, including the relationship between orthopaedic surgery and the overall health status of the patient, and the role of surgical trauma in this relationship;
2. demonstrate a critical awareness of the role of asepsis, the preparation of theatre, personnel and patient for orthopaedic surgery and the importance of post surgical nursing, nutrition and post-operative rehabilitation applying current evidence based medicine in order to achieve "best practice" standards;
3. demonstrate a comprehensive familiarity with the clinical presentation of the common orthopaedic surgical conditions affecting dogs, cats and small mammals;
4. evaluate critically the pharmacology and use of the major drug groups, especially antimicrobials, their applicability to the various orthopaedic surgical techniques and review and critically reflect on current practices in light of the knowledge gained;
5. demonstrate the ability to utilise a sound clinical reasoning process, incorporating evidence from the diagnostic database and scientific literature as well as the ability to appropriately adapt to client, animal and practice factors;
6. demonstrate the ability to recognise the appropriate orthopaedic case for onward referral.

Module Structure

The syllabus will be divided into 5 study units.

Study Unit 1 Fundamentals of Joint Disease

This unit will review the anatomy and physiology of joints, muscle, tendon and ligaments; the aetiology, pathogenesis and treatment of Osteoarthritis, Osteochondrosis, Immune-mediated joint disease, Infective arthritis and Tumours arising from and affecting joints.

Study Unit 2 Investigation of Joint Disease

This unit will cover investigation of joint disease including the analysis of synovial fluid and the synovial lining; Interpretation of haematology, biochemistry and serology (ANA, RF and Borrelia) results relevant to joint disease; Principles and application of arthroscopy; Radiography (plain and contrast) of joints; Principles and application of CT, MRI, scintigraphy and ultrasound where relevant to joint disease.

Study Unit 3 Treatment (general) of Joint Disease

This unit will cover the surgical anatomy of joints; The diagnosis and management of fractures and luxations of joints; The indications and techniques of Arthrodesis.

Study Unit 4 Treatment of Specific Joint Disorders

This unit will cover the aetiology, diagnosis and treatment of specific disorders (indicated in brackets) affecting the following joints : Temporomandibular (Dysplasia along with genetics and control schemes, and bone disorders); Shoulder (Osteochondritis dissecans, muscle and/or tendon injuries causing lameness); Elbow (Dysplasia, Incomplete ossification of the humeral condyle, Elbow replacement); Carpus (ligamentous injuries); Hip (Dysplasia along with genetics and control schemes, Perthes disease, and Hip replacement); Stifle (Patellar instability, Cruciate ligament disorders including use of tibial osteotomies, Meniscal injuries, Lateral collateral, medial collateral and straight patella ligament disorders, Disorders of the muscles and tendons arising adjacent to the joint, Osteochondritis dissecans); Hock joint (Osteochondritis dissecans, Shear injuries).

Study Unit 5 Muscle and Tendon Injuries

This unit will cover the Grading of severity of muscle and tendon injuries; the Clinical signs and classification of muscle and tendon injuries; the Treatment of muscle and tendon injuries (particularly the Achilles tendon); the Clinical signs and treatment of muscle contractures (infrapinatus, quadriceps).

Assessment Strategy

Portfolio of cases (20 case logbook presenting surgical cases covered by the syllabus outlined above, including surgical management of articular fractures, ligament and tendon disorders and joint luxations), 3 x reflective case reports (1500 words each) presenting cases of joint surgery, 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.