PRINCIPLES OF ONCOLOGY

Course Organiser: JM Dobson
Lecturers: JM Dobson, F Constantino-Casas, J Ladlow
Term: Michaelmas

Pre-requisites for the Course:
The students receive detailed lectures on the basic pathological processes of neoplasia and current concepts of oncogenesis in the Part IB Pathology Course: this understanding will form a basis for the Principles of Oncology course. Aspects of oncology are also covered in virology (oncogenic viruses), clinical pathology and the Alimentary System and Respiratory System in 4th year, and in other organ systems courses, Endocrinology, Dermatology and the Small Animal Medicine course in 5th year. These various courses are thus complimentary. Note that aspects of oncology delivered in those courses that are examined in Finals Part I and Part II may be included in those exams.

Aims:
The Principles of Oncology course aims to provide a core understanding of neoplasia in animal species using a practical- and veterinary-oriented approach. This is then followed by an appreciation of the subject across various organ systems and animal species courses in 4th and 5th year, including instruction in the management of neoplasia and therapeutic approaches in domestic animals.

Objectives:
At the end of the course the student should:

- be familiar with the classification and behavioural characteristics of common neoplasms in domestic animals
- be familiar with diagnostic techniques and be able to adopt a rational approach to the diagnosis of neoplasia in an individual case
- possess the essential knowledge to be able to interpret laboratory reports with respect to diagnosis and prognosis
- be able to devise or advise upon therapeutic options for an individual case.

Lecture List:

1. Introduction to pathological aspects of veterinary oncology  FCC
Definition of the cancer problem in domestic animals. Discussion of features of tumour growth and mechanisms of metastasis, cytological/histological features of neoplasia and morphological indicators of prognosis.
2. Introduction to clinical aspects of veterinary oncology JMD
General clinical approach to the diagnosis and staging of cancer in animals including: cytological and biopsy techniques, methods of assessment of the primary tumour, lymphatic and haematological metastases.

3. Clinical approach to the cancer patient including tumour-related haematological and metabolic complications JMD
Revision of clinical approach to the diagnosis and staging of cancer in animals including consideration of the more common haematological, metabolic and hormonal complications of neoplasia in animals. This will include: cancer-associated anaemia, thrombocytopenia and leucopenia (brief mention of DIC, monoclonal gammopathy/multiple myeloma and polycythaemia vera). Discussion of paraneoplastic syndromes mainly concerning hypercalcaemia and hyperhistaminaemia associated with mast cell tumours.

4. Principles of Chemotherapy JMD
The basic principles governing the use of cytotoxic drugs. Indications for chemotherapy in animals and general comments on toxicity, with brief consideration given to individual cytotoxic agents and commonly used combination protocols.

5. Principles of Radiotherapy and Photodynamic Therapy JMD
The principles of radiation therapy, techniques, indications for radiotherapy and photodynamic therapy in the treatment of animal tumours.

6. Principles of Surgical Oncology JL
The principles of surgical oncology, biopsy, excisional and reconstructive techniques.

7–8. Lymphoid tumours JMD
Pathological and epidemiological aspects of lymphoid tumours in animals. Clinical and therapeutic aspects of the diagnosis, staging and management of canine and feline lymphomas, with brief mention of the leukaemias and multiple myeloma.

Practical

1. Lymphoid tumours – gross, histological and cytological examples of lymphoid tumours in domestic animals, including work through examples of the approach to the diagnosis (including FNAs) and management of these tumours – will be delivered in the Clinical Pathology course.

Systems Oncology is delivered in the following courses:

Tumours of the alimentary system – Alimentary System course (4th year)
Tumours of the skin – Dermatology course (5th year)

Tumours of bones, joints and muscle – Orthopaedic Pathology course (4th year)

Tumours of the genital system and mammary glands – Reproductive Pathology course (5th year)

In addition to those listed above other practicals in systems courses will include examples of neoplasia:

Alimentary Oncology Practical – gross, histological and cytological examples of tumours of the alimentary system in domestic animals.

Skin tumours – gross, histological and cytological examples of skin tumours, with work-through examples of the approach to the diagnosis and management of these lesions.

Practical material regarding respiratory, reproductive, urinary tract and skeletal tumours will be included in the relevant practical classes.

Further reading:


