Course Organiser: ME Herrtage

Lecturers: ME Herrtage, K Hughes, PJ Watson, T Williams

Term: Michaelmas and Lent

Aims:
The course is designed to enable the student to understand alterations in renal and urinary function from a pathophysiological standpoint.

Objectives:
At the end of the course the student should be able to use this information in the diagnosis and management of renal and urinary disorders.

Lecture List:

1. Introduction to urology

2–4. Pathology of the urinary system
   Consequences of renal failure. Basic mechanisms of renal failure (prerenal, intrinsic and post-renal), fundamental differences between acute and chronic renal failure. Various categories of renal disease e.g. congenital/inherited, circulatory, toxic, glomerular disease, tubulointerstitial disease, parasitic disease and neoplasia. Lower urinary tract (e.g. congenital disorder, urolithiasis, cystitis and neoplasia).

5. Nephrotoxins/renal xenobiotic handling

6. Management of renal disease
   Acute renal failure. Chronic renal failure. Protein-losing nephropathy and the nephrotic syndrome.

7. Pharmacological control of micturition
   Physiology of micturition. Investigation of incontinence, dysuria and urinary retention. Drugs actions and indications for drug intervention.

8. Clinical Pathology I
   Laboratory evaluation of renal function including: factors influencing urea and creatinine; causes of azotaemia and how to distinguish between pre-renal,
renal and post renal azotaemia; significance of urine specific gravity; and other biochemical abnormalities in renal disease. More sensitive tests of renal function will be discussed also.

9. Clinical Pathology II
Tw
Urinalysis including: obtaining samples; analysing samples for urine specific gravity; dipstick evaluation; evaluation and causes of proteinuria; and sediment examination (including crystals).

10. Diagnosis and management of urinary tract infection (UTI) PjW
Pathogenesis, localisation and diagnosis of UTI; management of UTI (including selection of antibiotics; therapy failures). Bacterial prostatitis in the dog; collection and cytological evaluation of prostatic fluids; prostatic washes.

Urolithiasis: causes, clinical signs and diagnosis of urethral cystic and renal calculi; management of struvite, oxalate, cystine and urate calculi Feline obstructive uropathy: urolithiasis and urethral plug formation. Short and long term management.

Practical:
A 3 hour laboratory practical session combining case histories, laboratory data and pathological material. This will use fresh and fixed specimens, histological slides, photos, radiographs and clinical pathology data to illustrate key aspects of the lecture course.

Practical tuition will be further extended in clinical rotations.

The course is supplemented by two computer-based modules: a comprehensive, illustrated self-assessment program, and a lecture summary (with slides and narrative).

Handouts: All lectures

CAL:
- Pathology of the urinary system
- QA - Renal Pathology (Mac)
- Urinary System
- Advances in the management of glomerulopathies
- Acute primary renal failure: Diagnosis and management
- Cats with chronic renal failure: differences from the dog

Further reading: