



# ECVP/ESVP Summer School in Veterinary Pathology



## Marie Curie Training Courses

### Summer School 2006 – Mock Exam Case 3

#### 3. Tissue from a COW

##### DESCRIPTION OF THE HISTOLOGICAL FINDINGS

Kidney. One half of the section shows the presence of approximately 30 inflammatory foci, from 200 micrometers to 2 mm in diameter, multifocal and coalescing, haphazardly distributed in the cortex (mainly) and the medulla (rarely). The inflammatory foci share the same histological appearance (granulomas), the major cell types present are:

- macrophages,
- activated macrophages (epithelioid cells up to 30 micrometers in diameter, with a large vesicular nucleus and an extensive pale cytoplasm with ill-defined borders)
- Langhans-type multinucleated giant cells (large cells up to 80 micrometers in diameter with several eccentric nuclei, formed by the fusion of macrophages).
- a thick rim of lymphocytes and monocytes, and sparse plasma cells.

The largest granulomas contain hypersegmented or karyorrhectic neutrophils in their center. Most granulomas are surrounded by fibrosis.

The renal cortex also shows tubular rarefaction, glomerular fibrosis, a marked thickening of the interstitium with collagen deposition (fibrosis) and inflammatory cell accumulation: lymphocytes, plasma cells and macrophages. A moderate proportion of tubules show accumulation of hypersegmented neutrophils within their lumen.

Occasionally, there is fibrosis of the glomerular Bowman's capsule, dilatation of proximal tubules, presence of a pale acidophilic (proteinaceous) fluid within tubules (proteinuria), and necrosis of nephrocytes.

##### MORPHOLOGIC DIAGNOSIS/DIAGNOSES

Multifocal (1) to coalescing (severe) (chronic) granulomatous (1) (interstitial) nephritis (1) with Langhans-type giant cells.

##### MOST LIKELY ETIOLOGY

*Mycobacterium bovis*

##### MARKS

Kidney .....	1
Size of the granulomas.....	1
Cortical location of granulomas .....	1
Epithelioid macrophages with description.....	2
Langhans-type giant cells with description .....	2
Lymphocytes, and fibrosis surrounding the granulomas .....	2
Neutrophils in the granulomas.....	1
Rarefaction in glomeruli and/or tubules .....	1
Interstitial fibrosis.....	1
Tubular changes: proteinuria and luminal accumulation of neutrophils .....	2
Morphologic diagnosis.....	3
Most likely etiology .....	1
Design .....	2