ECVP/ESVP Summer School in Veterinary Pathology

Summer School 2010 – Emerging Infectious Diseases Case 13

Mouse

History:
The animal was experimentally infected with EBLV2 isolate RV1727.

Histology: Tissue from a mouse.

1. DESCRIPTION OF HISTOLOGIC FINDINGS

Brain and spinal cord. Mainly in caudal and ventral brain regions (pons, medulla), moderate multifocal perivascular cuffing by lymphocytes and a few macrophages is observed in both the grey and white matter. Close to these cuffs and to a lesser extent throughout the parenchyma in the affected areas, there are small aggregates of activated microglial cells (glial nodules) and there is moderate diffuse microglial activation (represented by microglia with comma shaped to slightly vesicular nuclei) and evidence of astrocyte activation (enlarged, vesicular, round nuclei). In the parenchyma immediately adjacent to the perivascular cuffs are also a few lymphocytes and macrophages. Scattered necrotic neurons surrounded by glial cells (satellitosis and neuronophagia) are seen [some sections]. Within perivascular infiltrates, glial nodules and occasionally throughout the parenchyma, there are individual degenerate cells (represented by nuclear fragments/debris; consistent with leukocyte and microglial apoptosis?). A few vessels exhibit a rim of erythrocytes (mild perivascular haemorrhage). Along the ventral medulla oblongata, there is a marked diffuse, lymphocyte dominated (lymphocytes, some macrophages) meningeal infiltrate.

The spinal cord exhibits a diffusely increased cellularity in both the grey and white matter, due to an increase in the number of microglial cells and astrocytes (these are in the majority activated, see above; diffuse gliosis). A moderate number of glial cells exhibit evidence apoptosis. Small numbers of swollen, homogeneously eosinophilic axons (spheroids) are seen. The number of neurons is reduced and there are There is also mild, patchy, lymphocyte-dominated (lymphocytes, fewer macrophages) meningeal infiltration, focally extending to the dorsal root ganglia.

2. MORPHOLOGIC DIAGNOSIS

Brain and spinal cord; moderate multifocal non-suppurative meningioencephalomyelitis.

3. ETIOLOGY: Bat lyssavirus