Histopathology: CNS pathology

These presentations are to help you identify, and to test yourself on identifying, basic histopathological features. They do not contain the additional factual information that you need to learn about these topics, or necessarily all the images from resource sessions.

This presentation contains images of basic histopathological features of selected pathologies of the central nervous system (healing cerebral infarction, Alzheimer’s disease and amyloid angiopathy).

Before viewing this presentation you are advised to review relevant histology, relevant sections in a pathology textbook, relevant lecture notes and relevant sections of a histopathology atlas.

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(Med 3 semester 2)
Haemorrhagic infarct. Very low power.
Cerebral infarction 1- several days. Neuronal red cell change (black arrows).
Cerebral infarction 1 - several days. Acute inflammation: neutrophils in a venule about to enter the tissue.
Cerebral infarction 5 days +. Foamy macrophages having phagocytosed myelin.
Cerebral infarction weeks-months. Reactive proliferating astrocytes (black arrows) that extend long cytoplasmic processes around the infarct (gliosis - black stars).
Edge of a cerebral infarction, months-years. Reactive astrocytes (black arrows) that extend long cytoplasmic processes around the infarct (gliosis - black stars). Haemosiderin containing macrophages (red arrows).
Old healed infarct, very low power.
Neuritic/senile plaque (pink) in Alzheimer’s disease.
Neuritic plaques in Alzheimer’s disease (special silver stain). These are extracellular aggregates of β amyloid derived from abnormal cleavage of the amyloid precursor protein (APP).
Neurofibrillary tangles (black arrows) in Alzheimer’s disease (special silver stain): bundles of filaments in the cytoplasm of neurons that displace or encircle the nucleus.
Amyloid angiopathy (Congo red stain). Amyloid (stained red) derived from Aβ peptide in the walls of small arteries and arterioles. Amyloid angiopathy also occurs in the absence of Alzheimer’s disease and is a not uncommon cause of spontaneous intracerebral haemorrhage in the elderly.