BLOOD SUPPLY OF THE BRAIN

Date: January 25, 2016

Resources:
- Abbreviated and focused recording of – Blood supply of the Brain PPT – Gruener
- Complete - Blood supply of the Brain PPT – Gruener
- UBC Learning Module on the Circle of Willis and Vertebral-Basilar system
  [http://www.neuroanatomy.ca/module_list.html](http://www.neuroanatomy.ca/module_list.html) (Don’t use IE and you need the adobe flash plugin)
- TeachSheet on CNS Blood Supply

KEY CONCEPTS & LEARNING OBJECTIVES (What you need to demonstrate to pass the test!)

I. Demonstrate the ability to:
   a.) Define the components & describe: cerebral circulation (major vessels), ganglionic arteries, perforated substance, Circle of Willis
   b.) Describe mechanisms that regulate cerebral blood flow
   c.) List the brain “barriers”
   d.) Describe the function of the blood-brain barrier (BBB) and its components (endothelial cells, pericytes, astrocytes, neuronal processes)
   e.) Describe the drainage pattern of cerebral veins (deep and superficial groups)

II. Ability to identify and recognize
   a.) Vascular territory/distribution of strokes, intracerebral and subarachnoid hemorrhage on neuroimaging
   b.) Identify on neuroimaging and describe the pathophysiological difference between a subdural and epidural hematoma

III. As the course progresses you need to demonstrate the integration of anatomical and clinical knowledge by:
   a.) Suggesting a site of dysfunction that would explain signs and symptoms in a clinical case presentation.
   b.) Based on a clinical presentation identify the (expected) site of abnormality on an MRI (or CT) scan of the brain.
   c.) Develop 2-3 potential diagnoses, appropriate to the patients’ clinical scenario, course and medical history, which would explain the etiology of their difficulty

Additional resources for those who are really (we mean really) interested!

Biller J. *Practical Neurology*, 4th Ed., Lippincott Williams & Wilkins 2012

Benarroch EE. *Blood-brain barrier: Recent developments and clinical correlations*. Neurology 2012;78:1268-1276