Neuro Nurse Tips for Nurses, Part II -

Disease Processes

This episode discusses subdural hematomas, epidural hematomas, seizures, brain tumors, central pontine myelinolysis, and diffuse axonal injury.

Subdural hematoma

- SHD is not a stroke
- Dura = covering of the brain… blood is under the dura but on top of the brain
- Often a tear in a vein, which results in a slow blood accumulation
- Happens often with elderly; brain atrophies and creates space
- Acute - blood is new, the blood isn't thin. Quite thick… if it’s large enough they'll go to the OR for an evacuation
- If it’s older (subacute) 1-2 weeks… but blood thins out and become easier to treat. Some surgeons will do a bedside procedure to remove the clot

Epidural hematoma

- Above the dural layer of the covering the brain
- Typically the result in an artery tear, which results in a very fast accumulation of blood in the epidural space
- Appears quickly, enlarges quickly, and is often a surgical emergency
- Common place is around the temporal bone near the eye… meningeal artery… may not lose consciousness
- Liam Neeson’s wife died of this - here is a short article from Advanced Neurological Associates
- Change in HOB with lots of pressure

Seizure

- Patients with neurological injury are at risk for seizures
- You cannot tell just by looking at a patient that they are having a seizure or not; only the EEG can absolutely confirm that
- Safety and maintaining an airway is of utmost importance
- Must get seizures under control
- Antiepileptic drugs (AED’s)
- Pseudoseizures / non-epileptic seizure
  - Looks like they’re having a seizure, but when you look at an EEG they are not actually having one
- Status epilepticus
  - Maybe one long seizure, or multiple seizures with minimal breaks
Must stop the brain from seizing! Brain electricity is going bananas - rescue drugs and airway protection (intubation) is frequently necessary because they cannot maintain their airway while seizing that frequently

- **Subclinical seizures**
  - Not evident from CT or assessment

### Brain tumors

- Many kinds of tumors
- Some are cancer, some are not - must get a biopsy, which is incredibly invasive (craniotomy), to definitively say if it is cancerous or not
- Watch Na+ and for CSF leak (clear fluid out of nose, ear)
- **Pituitary tumor**
  - Typically, incision is made through the nares
  - Coughing/sneezing precautions
  - Usually benign
  - Diabetes Insipidus is something to watch for
  - Watch urine output closely
- Some get steroids (research is changing!) - but if they do, watch blood sugar
- Emotional support is critical

### Central Pontine Myelinolysis (CPM)

- Medscape article
- Overcorrection of serum sodium - cannot correct too fast (more than 8-10 in 24 hours)
- Must watch closely when administering hypertonic saline
- Essentially, it’s a stripping of the myelin sheath
- Irreversible
- Can be mild, moderate, severe, and fatal
- This is a big deal!
- You won’t get an alert from the lab for overcorrection unless it is over their threshold for hypernatremia.
  - For example, if you correct from 125 to 135 in 24 hours, it won’t alert the lab because technically the 135 is normal. However, this is a HUGE change in 24 hours and concerning for demyelination.

### Diffuse axonal injury

- Wikipedia article
- Seen with trauma patients
- The force of traumatic shearing causes this
- Global deficits rather than deficits with a stroke that’s one sided; most (roughly 90%) never regain consciousness
- Ranges from mild to severe
More resources

- Becoming nursey link, first and second editions
- [How I Deal With Seeing Patients Die Frequently](#) - YouTube
- Brené brown’s daring greatly
- Secondary trauma blog post link