PSEUDO-SUBARACHNOID HEMORRHAGE AFTER INADVERTENT DURAL PUNCTURE DURING CERVICAL EPIDURAL STEROID INJECTION

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CASE PRESENTATION

- 84 yo F transferred from OSH to ICU with dx of Diffuse SAH
- PMHx: HTN, DVTs, Basal Cell Carcinoma and Cervical Intervertebral Disc disease
- Patient has been receiving uncomplicated CESI for several years resulting in significant relief of her cervical radiculopathy pain
On morning of admission pt. received CESI in a nearby pain clinic

Immediately following injection the pt. c/o sudden severe headache, dyspnea, weakness in BUE/BLE as well as nausea with 1 episode of emesis

O2 sats dropped in the lower 80s requiring non-rebreather to keep O2 saturations above 90
CASE PRESENTATION CONTINUED

- Transferred to ED
- BiPAP but did not require intubation
- CT Head was performed and read as "Diffuse Subarachnoid Hemorrhage"
- Transferred to ICU for continued care
CT scan
Upon arrival to the ICU, all symptoms had resolved 6-12 hours later.

Head CTA showed no e/o aneurysm.

Neuro IR and Neurosurgery decided no intervention was necessary.

Day #2 pt. discharged to the floor.

Further discussion with Neuro IR revealed that he believed this to be a case of Pseudo-Subarachnoid Hemorrhage.
Sub arachnoid hemorrhage (SAH) is a condition where blood enters the subarachnoid space.

Complications include: headache, respiratory depression, loss of consciousness, neurological deficits, and even death.

Pseudo-Subarachnoid Hemorrhage (PSAH) mimics true SAH in which there appears to be attenuation in the basal cisterns with displacement of CSF.
Causes:

- Edema following anoxia (MCC), pyogenic meningitis, spontaneous intracranial hypotension, venous sinus thrombosis, bilateral subdural hemorrhage, intrathecal contrast and leakage of high-dose IV contrast into the subarachnoid spaces
DIFFERENTIAL DIAGNOSIS

- Subarachnoid Hemorrhage
  - Headache
  - Nausea/vomiting
  - AMS
  - Focal neurological symptoms
  - Dysarthria
- High spinal
- Contrast-induced neurotoxicity
RULING OUT PSAH

- Literature search proposes that CSF studies can aid to rule out PSAH
- Debate regarding utility of the Hounsfield units (HU)
  - Pts with PSAH had mean values ranging from 29-33 HU
  - Pts with true SAH had mean values of 60-70 HU
A misdiagnosis of SAH when PSAH is present can lead to the patient incurring risks while undergoing unnecessary procedures as well as absorbing the high cost of ICU care.

Therefore, PSAH should cautiously be on the differential diagnosis if radiological findings are found after the completion of a neuraxial procedure in which contrast is used.
REFERENCES


