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

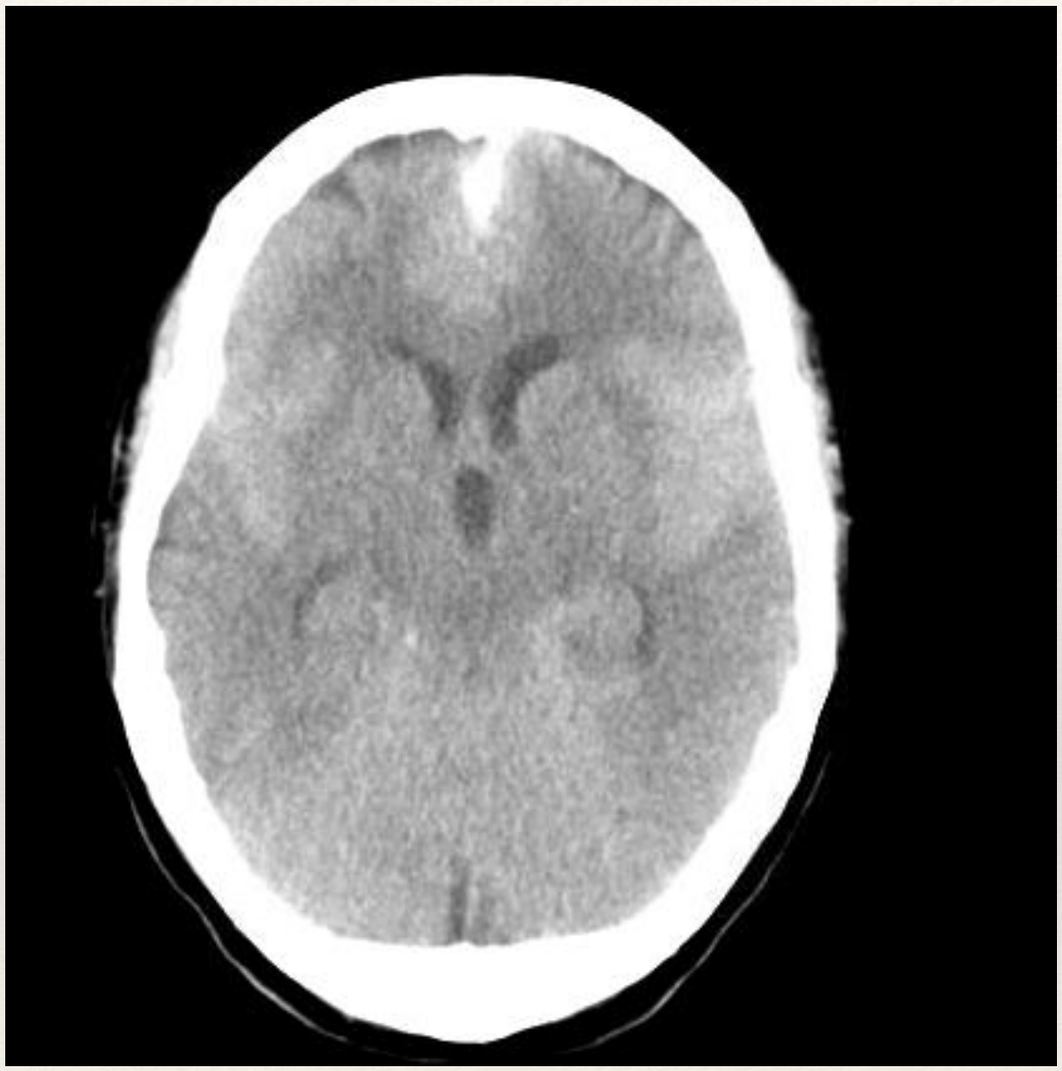
CASE PRESENTATION CONTINUED

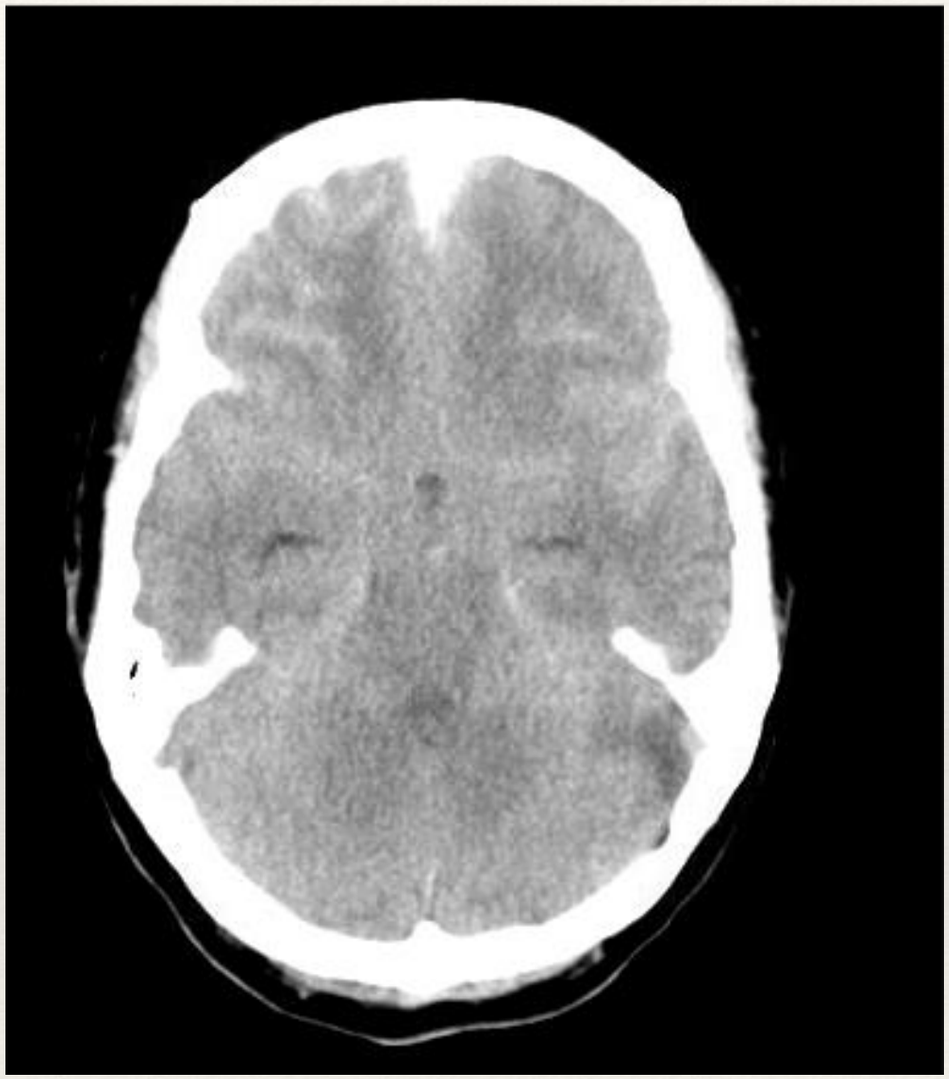
- On morning of admission pt. received CESI in a nearby pain clinic
- Immediately following injection the pt. c/o sudden severe headache, dyspnea, weakness in BUE/BLE as well as nausea with 1 episode of emesis
- O2 sats dropped in the lower 80s requiring non-rebreather to keep O2 saturations above 90

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





CASE PRESENTATION CONTINUED

- 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

PSEUDO-SUBARACHNOID HEMORRHAGE

- Sub arachnoid hemorrhage (SAH) is 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

PSAH CONTINUED

- 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

CONCLUSION

- 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.

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