HEAD TRAUMA/SUBDURAL HEMATOMA

LEARNING OBJECTIVES

• Describe the importance of ↓ level of consciousness in a patient with head trauma
• List the differential diagnosis of a patient with head trauma & focal neurologic deficit
• Describe the signs of skull fracture
• Select most appropriate initial diagnostic test in patient with head trauma & neurologic deficit

LESION LOCALIZATION

• Bicerebral dysfunction
  – ↓ consciousness = brainstem or bicerebral dysfunction
  – Normal eye movements suggests bicerebral dysfunction
  – Isolated lateral rectus weakness (CN 6 palsy):
    • “false localizing sign” that can occur as a result of ↑ ICP
• Focal cortical dysfunction
  – Left cerebral cortex
    • aphasia
    • right visual field deficit
    • right hemiparesis
    • right hemisensory deficit
  – Right cerebral cortex
    • left hemineglect
    • left visual field deficit
    • left hemiparesis
    • left hemisensory deficit

DIFFERENTIAL DIAGNOSIS

• Subdural hematoma
• Epidural hematoma
• Cerebral contusion
• Intracerebral hemorrhage
• Ischemic stroke
• Mass lesion (e.g., tumor, abscess, AVM)

EVALUATION

• CT scan brain without contrast
  – Best initial imaging study to detect acute blood & skull fracture
  – Subacute blood is isodense, may be hard to see on CT
• MRI brain without contrast
  – Best to detect subacute blood
• INR and platelets

CT SCANS OF SUBDURAL HEMATOMAS: ACUTE, SUBACUTE, & CHRONIC

MRI: BETTER TO VISUALIZE SUBACUTE SUBDURAL HEMATOMA

CT: late subacute blood, iso-to hypodense
FLAIR (T2) MRI: late subacute blood is hyperintense
CT SCANS: ACUTE SUBDURAL VS. EPIDURAL HEMATOMA

A. Acute right subdural hematoma over the convexity (concave to bone) and interhemispheric (parasagittal).
B. Acute left epidural hematoma (convex to bone).

Note: SDHs, due to tearing of bridging veins, accumulate at variable rates, typically in a crescent shape.

Note: EDHs, usually due to tearing of a meningeal artery, accumulate rapidly, forming a bulge.

MANAGEMENT

• Neurosurgical evacuation of subdural hematoma
• If patient taking anticoagulants, discontinue -
  – Administer fresh frozen plasma (FFP)
  – Give vitamin K (subcutaneously or intramuscularly) only if necessary, since it will inhibit warfarin efficacy for days to weeks
  – Resume anticoagulants if necessary only after okayed by neurosurgeon
  – Use aspirin 325mg/day in meantime, if possible

COUNSELING

• Advise patient to avoid stepladders, heavy machinery, etc.
• If warfarin necessary, consider lower INR goal (e.g., 1.6-2.5)

THE END

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