CVA

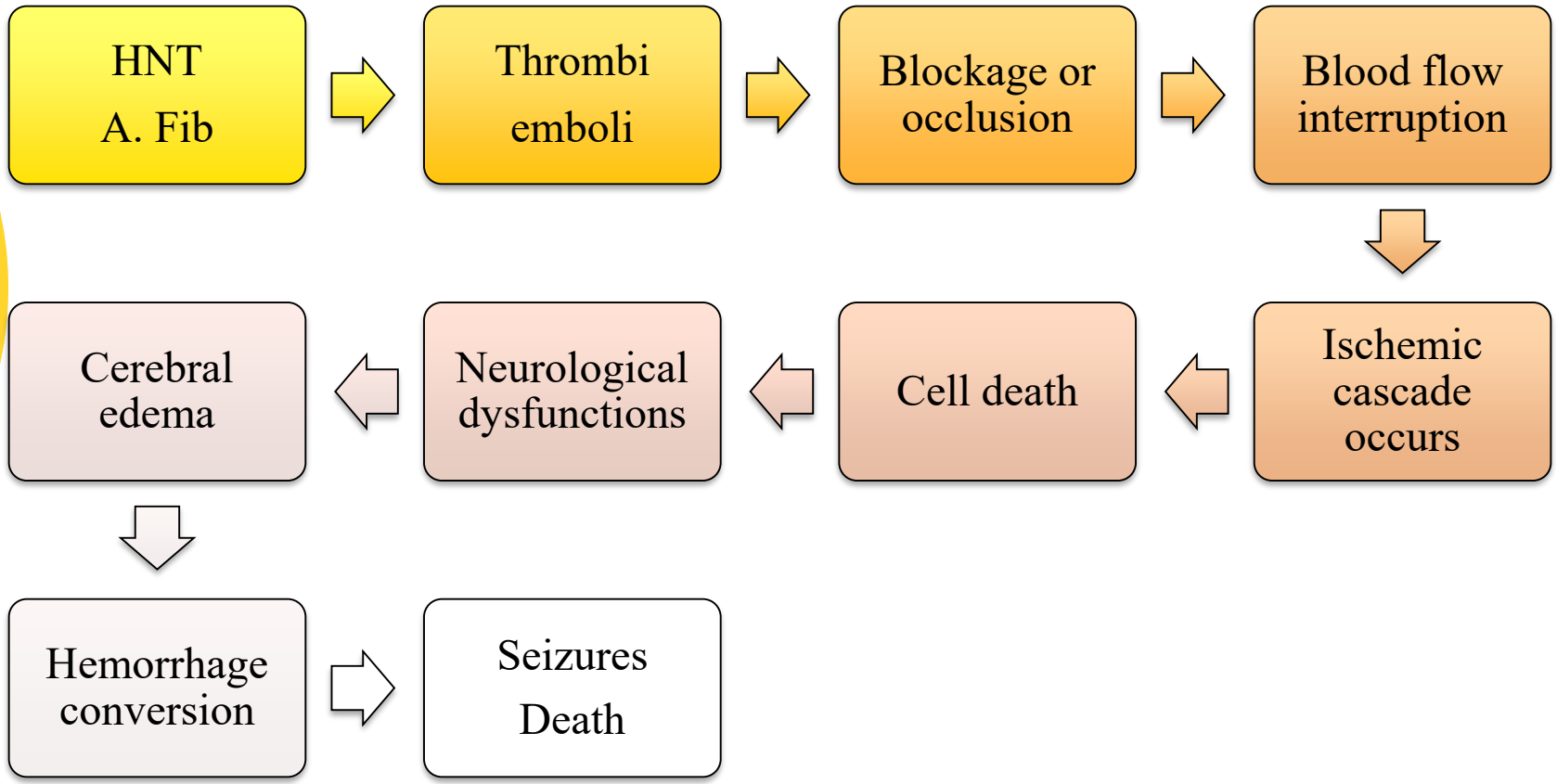
Stroke

Brief

Stroke

- Conceptually: sudden, acute, neurological deficit **> 24 hours** caused by interruption of blood flow to the brain.
- The greatest risk for stroke is uncontrolled hypertension
- TIAs incidence increases the risk for stroke
- Types:
  - Ischemic
    - The great majority (87%)
    - The most common cause of cardiac emboli is **atrial fibrillation.**
  - Hemorrhagic: EDH, SAH, ICH
    - Higher mortality

Ischemic Stroke



Stroke: Assessment

- Neurological dysfunctions > 24 hours
  - **ALOC**
  - **Hemiparesis** (Hemiplegia): paralysis of one side
  - **Aphsia**: loss of ability to understand or express speech
  - **Hemianopia**: blindness over half the field of vision.
  - **Seizures: *within first 24 hours***
  - Sing and symptoms of elevated ICP (intracranial hypertension).

Stroke Warning Signs

STROKE WARNING SIGNS

American Heart Association | American Stroke Association

SUDDEN NUMBNESS OR WEAKNESS OF THE FACE, ARM OR LEG, ESPECIALLY ON ONE SIDE OF THE BODY

SUDDEN CONFUSION, TROUBLE SPEAKING OR UNDERSTANDING

SUDDEN TROUBLE SEEING IN ONE OR BOTH EYES

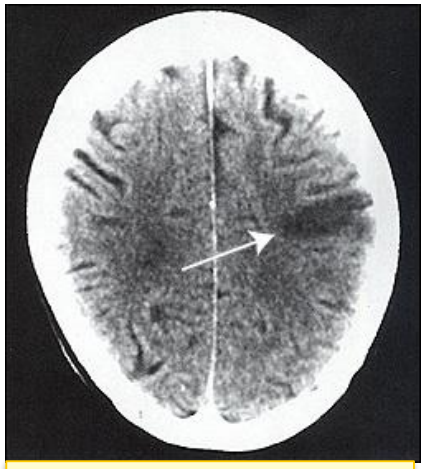
SUDDEN TROUBLE WALKING, DIZZINESS, LOSS OF BALANCE OR COORDINATION

SUDDEN SEVERE HEADACHE WITH NO KNOWN CAUSE

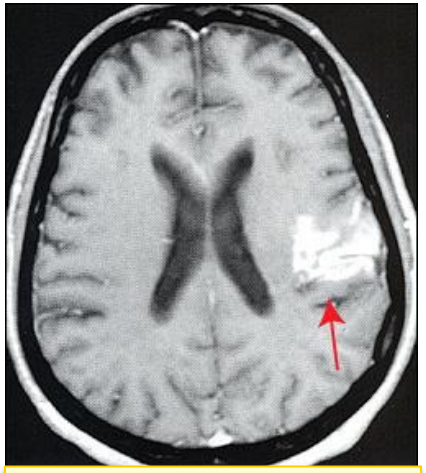
Stroke: Diagnosis

- Non-contrast CT scan:
  - The imaging of choice!
  - Non-contrast first to rule out intracranial hemorrhage
  - Noninvasive visualization of ***the cerebral structures.***
- CT Angiography:
  - Follow the non-contrast CT in case of bleeding
- MRI:
  - For infarct
- Lumbar puncture:
  - *Only if SAH is suspected and CT-scan is normal*
- Lab:
  - Metabolic imbalance, labs for underlying causes

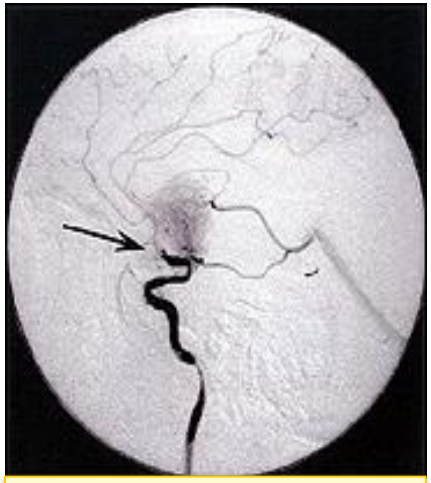
Imaging of Stroke



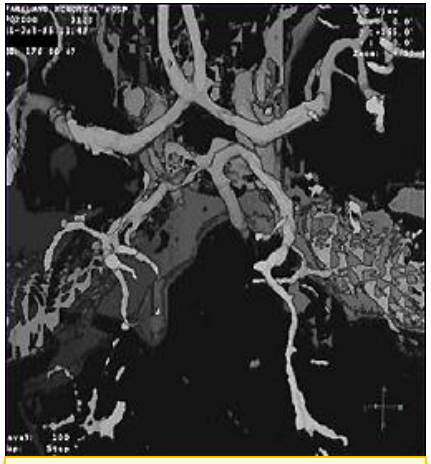
Non-Contrast CT



MRI



Angiogram



CT Angiography

Ischemic Stroke: Medical Management

- Emergency:
  - Stabilization
- Acute Management:
  - Thrombolytic therapy:
    - Intravenous recombinant tissue-type plasminogen activator (rtPA):
      - Goal: To dissolve the clot and reperfuse the ischemic brain
      - Must be given within 3 hours of ischemic stroke onset.
      - Ischemia must be confirmed by CT scan before administration
      - No subsequent Heparin or Coumadin for at least 24 hours.
      - Dose: 0.9 mg/kg IV (not to exceed total dose of 90 mg)
        - Administer 10% of total dose as initial bolus over 1 minute;
        - 90% of the dose over 59 minutes.
      - Keep BP below 180/105 (medications of choice: labetalol or nicardipine)

Who is NOT candidate for thrombolytic therapy ?

- Evidence of intracranial hemorrhage on pretreatment evaluation
- Suspicion of subarachnoid hemorrhage
- Recent stroke, head surgery, or serious head trauma in the past 3 months.
- Uncontrolled hypertension at the time of treatment
- Seizure at the stroke onset
- Active internal bleeding
- Intracranial neoplasm, arteriovenous malformation, or aneurysm
- Known bleeding tendency, including but not limited to
  - Current use of anticoagulants or an international normalized ratio (INR) > 1.7 or a prothrombin time (PT) > 15 seconds
  - Administration of heparin within 48 hours preceding the onset of stroke and an elevated activated partial thromboplastin time at presentation
  - Platelet count < 100,000 mm^3

Other Medications

- Antiplatelet Agents
- Anticoagulants
- Anticonvulsant
- Antihypertensive Agents