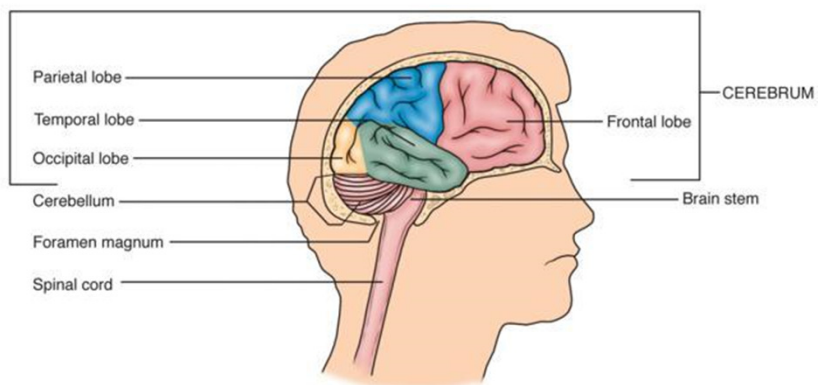


Neurological Emergencies

Aaron J. Katz, AEMT-P, CIC

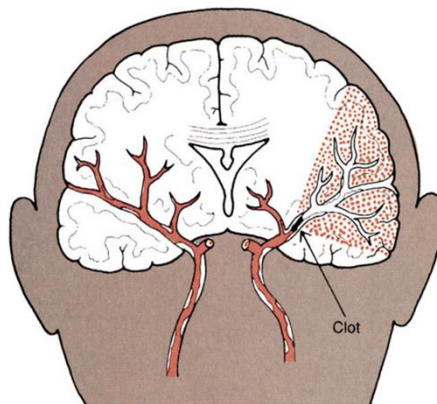
www.es26medic.net

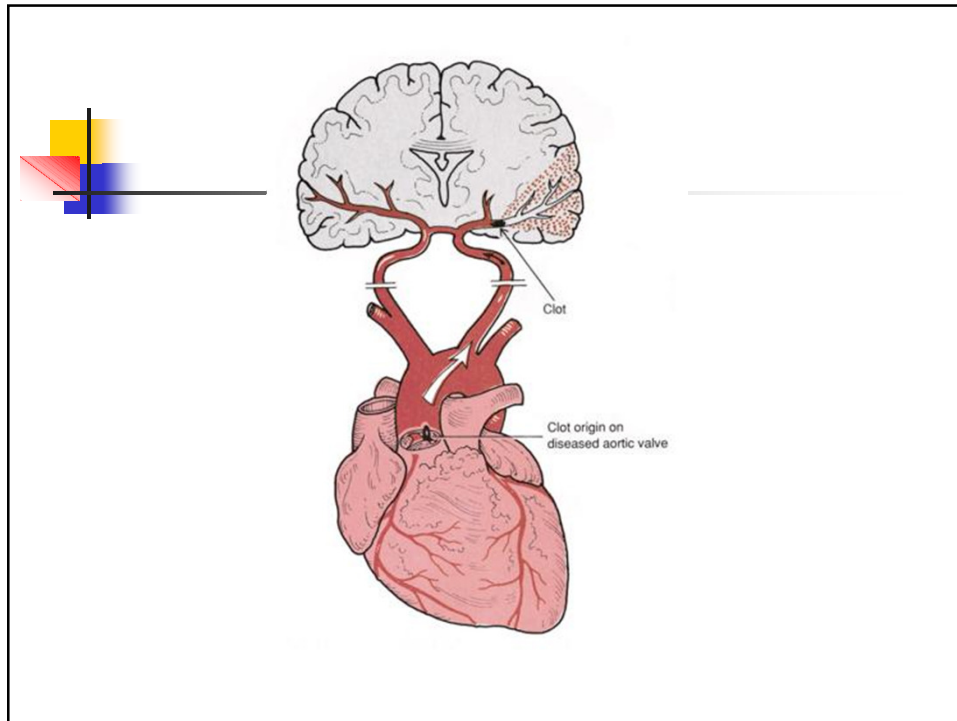
2013



Stroke ("CVA")

- **C**erebro**V**ascular **A**ccident
- Brain Attack
- Brain damage caused by a blockage of blood to a specific area of the brain
- Can be due to:
 - A clot in an artery
 - *Ischemic* stroke
 - Bleeding in the brain itself
 - *Hemorrhagic* stroke





- ## CVA – S/S
- Altered mental status – confusion
 - Impaired (slurred) speech
 - Paralysis
 - Facial muscle weakness
 - Unequal pupils
 - Loss of sphincter controls
 - Unconsciousness
 - Seizures



Damage – the extent

- Depends on:
- Location within the brain
- Time elapse since the blockage
- Severity of the bleed



TIA – “mini stroke”

- **Transient Ischemic Attack**
- **Same s/s as stroke**
- Resolves spontaneously within 24 hours
 - Note different definitions
- **No difference in our treatment**



Stroke -- Treatment

- Request ALS
- **ABCs**
 - NPA a very useful device
- **O₂**
- Position patient with head & chest elevated – (unless airway is compromised)
- Establish time of onset of S/S
- Perform Cincinnati Pre-hospital Stroke Scale
- Protect paralyzed extremities
- **Quiet** transport to **appropriate** hospital
 - **Stroke center if feasible!**



Cincinnati Pre-hospital Stroke Scale

- Assess for “facial droop”
 - Have the patient smile or show teeth
- Assess for “arm drift”
 - Have the patient close eyes and hold both arms out for 10 seconds
- Assess for abnormal speech
 - Have the patient say “You can’t teach an old dogs new tricks”
- **→ When was the last time this patient was seen normal ←**
- **Report your findings**

Stroke – Treatment – cont'd

- **If unconscious:**
 - Aggressive airway management
 - OPA/NPA and BVM and suction
 - **CVA patients vomit – be prepared to deal with it!**





Seizures

- Disruption in usual electrical activity of brain
- **Not a disease in itself** – rather, a sign of an underlying defect



Seizures -- causes

- Idiopathic
- Toxins
- Tumors
- Infection
- Trauma
- Metabolic
- Congenital defects
- High fever in children (“febrile seizures”)



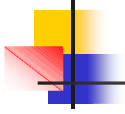
Epilepsy

- Best known of the seizure disorders
- Some are born with it
- Following head injury
- Following head surgery
- **Many patients who are compliant with their medications can live fairly normal lives**

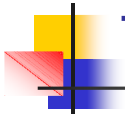


Other causes of seizures

- Stroke
- Hypoglycemia
- Eclampsia (pregnancy with HTN and seizures)
- Heat stroke
- Hypoxia



The "aura"



Types of seizures

- Simple partial seizures
- Complex partial
- Absence ("petit mal")
- Tonic-clonic
 - Generalized
 - Grand mal



Simple partial seizures

- Usually no LOC
- Activity to one part of the body
- Tingling, jerking, stiffening



Complex partial seizures

- Abnormal behavior that varies from person to person
- Patient can appear drunk or on drugs
- Non-violent
- Confused, staring, lip smacking, chewing/pulling on clothing
- No LOC



Absence (“petit mal”)

- Lasts for 1-10 seconds
- Temporary loss of awareness
- Can go unnoticed
- **Often a cause of learning problems in children**



Tonic-clonic – “Grand Mal”

- Lasts a few minutes and has three distinct phases
- Tonic phase
- Clonic phase
- Postictal phase



Tonic phase

- Rigidity and stiffening
- Lasts about 30 seconds
- **Breathing may stop**
- Sphincter control may be lost
- Patient may bite tongue



Clonic phase

- Body jerks violently
- Lasts 1 to 5 minutes
- Patient may foam or drool
- Patient may become cyanotic



Postictal phase

- When seizure stops
- Patient can regain mental status immediately or over several hours
- May have a headache, be drowsy, or mildly confused
- May become violent



Seizures -- treatment

- **→ If you arrive and they are still seizing, ASSUME that they are in status epilepticus and therefore:**
 - Request ALS
- Protect the patient from harm – do not restrain
- **ABCs**
 - NPA
 - Suction – careful with suctioning the back of the throat – can cause vomiting!
 - O₂



Seizures – treatment (cont'd)

- Position in recovery position, unless C-Spine may be injured
- Transport immediately



Treating the post-seizure patient

- ABCs
 - Suction – careful with suctioning the back of the throat – can cause vomiting!
 - O₂
- Treat injuries sustained during the seizure
- **Be prepared for additional seizures!**
- Transport



Status epilepticus

- Two or more seizures without regaining full consciousness
- **A true emergency!**
- Brain can heat up to 109 degrees
- Same treatment as for seizures AND
 - **ALS**
 - **Rapid transport**
- **If you arrive at a scene and patient is seizing – assume Status Epilepticus!**



Seizures in children

- Must be diligent about changing doses of anti-seizure medications to keep up with their changing weights
- Many pediatric medication doses are weight dependent
- **A frequent reason that we get pediatric seizure calls**