

# 19 Neurosurgery

## SAH

### Pathophysiology

#### Causes

- 85% ruptured aneurysm, 10% perimesencephalic haem
- Aneurysm 90% berry, **-2% population incidence**
- Other: trauma, cocaine, AVM, perimesencephalic haemorrhage, venous infarct, cerebral vasculitis

#### Aneurysm Risk Factors

- Familial - **Smoking** - > 50yo
- **HTN** - Etoh +++ - **CT disease**
- F > M - OCP - PKD

#### Examination

- Seizure - Neck stiffness
- ↓ LOC (2/3) - CN III palsy
- Isch Δ ECG - Intraocular haemorrhage (1/7)
- Cardiac Arrest (3%)

#### CT

#### Sensitivity with time

< 6hrs	>99%	> 1 wk	50%
< 12hrs	97.5-100%	> 2 wk	0%
< 24hrs	92-95%		

NB small bleeds will be cleaned up by CSF flow & CT needs Hct > 27% to see

#### CT Findings

- Predominantly around circle of willis (suprasellar cistern)

#### Lumbar Puncture

See neurology for LP interpretation

- normal LP = **protein < 0.4, lymph < 5, glc > 0.6**
- **NPV good: no SAH if no Xanthochromia, RBC < 5**
- PPV questionable
- Blood > 100,000 suggests SAH
- > 10,000 LR +6
- **> 2,000 + Xanthochromia = 100% sens**
- **< 65% Δ Bottle 1 to 3 LR 3.6**
- **> 65% Δ Bottle 1 to 3 LR 0.10**
- Xanthochromia 85% sens for SAH
- Made up of Bilil & OxyHb

#### Management

- Same as **head trauma**
- **Nimodipine** 60mg to prevent **vasospasm** D4-14
- Aim MAP 80, SBP 120-140 using **Nifedipine** 1<sup>st</sup>

#### Grading

#### Fisher Scale

1. No SAH or IVH
2. < 1mm SAH
3. Localised > 1mm
4. IVH, ICH or Diffuse SAH

Risk of vasospasm if gr 3,4

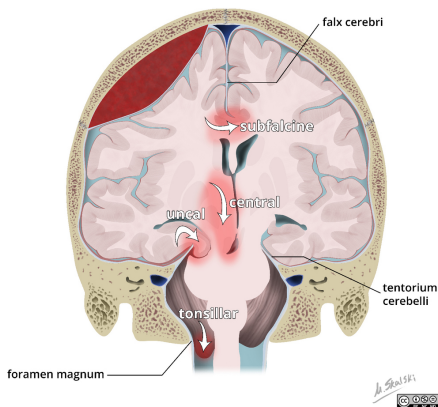
#### WFNS Grading

1. GCS15
2. GCS13-14 w/out motor deficit
3. GCS13-14 w/ motor deficit
4. GCS 7-12
5. GCS < 7

Survival, GCS 15,14,12,7

## BRAIN HERNIATION PATTERNS

- Subfalcine most common & easily recognised on CT



#### Ring enhancing Lesions

MAGICAL DR

- **Mets** - **AIDS**
- **Abscess** - **Lymphoma**
- **Glomas** (most common) - **Demyelination**
- **Infarct** - **Radiation necrosis**
- **Contusion**

## VP Shunt

### Malfunction

- Slit ventricle syndrome (over-drainage)
- Loculation
- Pseudocyst
- Distal: #, disconnection, migration, misplacement
- Prox: Obstruction, infection

### Hypertensive Intracranial Haemorrhage

- Pontine > Thalamus
- From Charcot-Bouchard aneurysms (perforating)

## SPINAL EPIDURAL ABSCESS

### Source

#### Haematogenous

- skin/soft tissue
- Prosthesis
- Endocarditis
- Pneumonia
- UTI

#### Contiguous

- Vertebral OM
- Retropharyngeal abscess
- Pressure sores
- Psoas abscess
- Penetrating trauma
- Iatrogenic: epidural
- Spinal stimulator

### Organism

- Staph
- Strep
- GN

### Complications

- Sepsis
- Contiguous: OM, pan-spinal abscess
- Cord dysfunction: paralysis

### Sx

- Back pain
- Fever
- Nerve root irritation
- Neurological eg sensory, motor, bowel, bladder

### Mx

- Diagnose: MRI
- ABx: **Cefotaxime, flucloraxillin ± Vancomycin**
- Source control
- Resus

## 20 Max Fax

## DENTAL

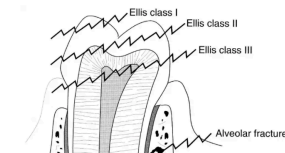
- 1ry: 20 teeth; 2ry: 32 teeth
- Numbering XY
- X: 1RUQ, 2RLQ, 3LLQ, 4LUQ
- Y: Position starting at midline

### Bleeding Tooth Socket

- Usually post extraction
- Treat coagulopathy (intrinsic or extrinsic)
- Mechanical
- Bite down on **adrenaline/TXA** soaked gauze
- Inject socket with **lignocaine/adrenaline**
- Pack socket with sponge or suture
- ABx (**amp & metro**)

### Tooth Fracture

	Exam	Path	Mx
I	White	Enamel #	Analgesia
II	Yellow	Dentin, no pulp	Ca(OH)2, dentist < 24hrs
III	Pink	Dentin, pulp	Cover & refer
IV	Black	Non-vital	Refer
V	Gone	Avulsion	See below
VI	Root	Root	Refer



### Avulsed Tooth

- dont replace 1ry
- Survival </ 1% per minute (non viable >6 hrs)
- Store in milk or mouth awaiting re-implantation
- Reimplantation: clean → suction socket → replace & splint
- Contraindications for reimplantation: # root, # alveolar

### Dental Trauma

- Subluxation = loose
- Luxation = displaced in a certain position
- Intrusion/Extrusion = in/out
- Avulsion = out completely

# 21 ENT

## EAR

### Otitis

#### Externa

- Cause: **pseudomonas, proteas, s. aureus**
- Mx: wick, **sofradex**, Δ daily, PO if severe (**Cipro**)
- **Fungal OE not painful**

#### Media

- Cause: **s. aureus, h. influenza, m cararrhalis**
- Mx: **amoxicillin, sofradex** if perforated

#### Mastoiditis

- Complication of OM or iatrogenic
- CT diagnosis
- Mx: ENT, **ceftriaxone 2g, metronidazole 500mg**

#### Perforated TM

- Cause: OM, trauma, iatrogenic, cholesteatoma
- Mx - **Trauma**: most heal, surg if > 50% defect
- **Suppurative**: rule out mastoiditis, Tx as per OM

#### Perichondritis

- Ear cellulitis, often from **piercings**
- Mx: **flucloraxillin**, ENT OPD

#### Chondritis

- Cartilage infection: **very bad**
- Cause: Perichondritis, burns, direct
- Ex: **Pain out of proportion**, insidious onset
- Mx: **flucloraxillin**, urgent ENT for I&D

## THROAT

### Epiglottitis

- Cause: **H influenza, parainfluenza, pneumococcus, GAS**
- Ex: fever, septic, hoarse, hot potato voice, dysphagia, stridor, drooling
- Mx - Airway: secure, minimal handling, upright
- **Adrenaline** neb 5mg, HDU
- ABx: **cefotaxime 1g**
- **Dexamethasone 8mg**

### Post-Tonsillectomy Bleed

- Sit upright
- Inject **adrenaline** if clear point
- Gargle: Ice, H<sub>2</sub>O
- **Cophenlycaine** spray
- **Adrenaline** 1:1000 soaked gauze
- **Adrenaline** neb (5mg in 5ml)
- RSI & Pack
- Ref ENT for OT Mx

### Retropharyngeal Abscess

#### Ex

- sepsis - hoarse
- swollen neck - drooling
- torticollis - unable to lie flat
- ROM neck

#### Mx

- Same as epiglottitis
- ABx: **BenPen & Metronidazole**

### Complications

- Airway obstruction
- Vasc: jug vein thrombus, carotid compression
- Local spread: Mediastinitis, cervical OM
- **Spinal cord abscess**

### Neck Masses in Kids

- Submental: sialadenitis, supportive lymphangitis
- Supraclavicular: cancer
- Ant SCM: branchial cleft cyst
- Base of tongue: cystic hygroma
- Midline: - thyroglossal cyst (moves with tongue)
- dermoid cyst (mobile with skin)
- thyroid mass

## EPISTAXIS

### Anterior

- Suction/blow clot - Balloon tamponade
- Nasal compression - Top TXA/Adrenaline
- Topical vasoconstrictor - IDC
- AgN cautery - Surgery
- Reverse coagulopathy

### Posterior

- GA posterior cautery
- Arterial ligation
- Embolisation
- Sphenopalatine artery injection adrenaline