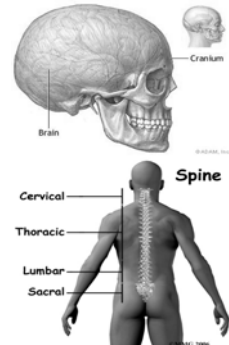


Post Op Care of the Neurosurgical Patient

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 St. Anthony Hospital

What Are We Dealing With?

- Two Types of Neurosurgical Patients
- Cranial Patients
- Spinal Patients

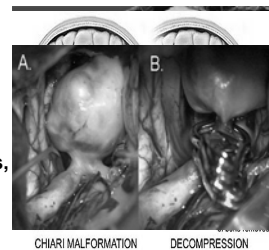


Types of Cranial Patients

- Head Traumas
 - MVA, ATV, Falls, GSW, Blunt Trauma
- Intracranial Hemorrhages
 - EDH, SDH, SAH, IPH
- Brain Tumors
 - Meningiomas, Malignant (Gliomas), Pituitary Adenomas, Metastatic
- Epilepsy
- Infections
 - Biopsies may be done to ID infection

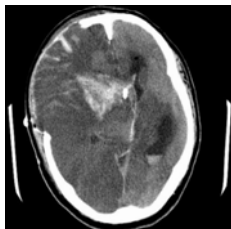
Types of Surgeries Seen in Your Area

- Craniotomy
- Tumor resections, Evacuation of hematoma, Chiari Malformations, aneurysm clippings



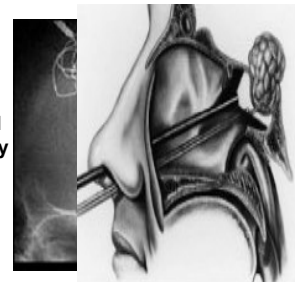
Types of Surgeries Seen in your Area

- Craniectomy
- Bone flap is removed to allow for swelling



Types of Surgeries Seen in your Area

- DBS
- VPS
- Transsphenoidal Hypophysectomy
- Pituitary Adenomas



Post Op Assessment of the Cranial Patient

What to Assess

- LOC, Orientation, & GCS
- Cranial Nerves (all)
- Motor Assessment
- Cerebellar Testing
- Sensory Assessment



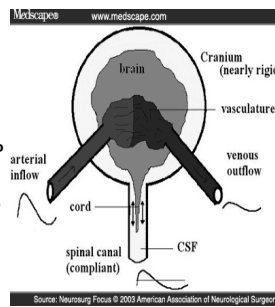
Post Op Complications and Considerations: Cranial

- Infection
- Post Op bleeding
- Stroke
- Seizures
- CSF Leak
- DVT
- Temperature: Hypothermic best
- BP: MAP of 90
- Body Position: Head straight
- Pain Medication: This one's tricky
- Blood sugar: Normoglycemic

Concepts of Care for Patients with ^ ICP

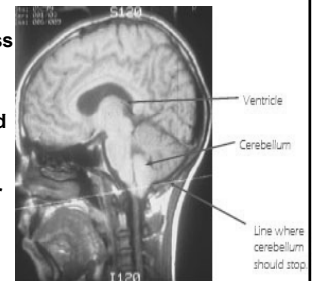
Monro Kellie Doctrine

- Brain Tissue = 80%
- CSF = 10%
- Blood = 10%



Concepts of Care for Patients with ^ ICP

- Normal ICP is less < 15
- ICP is considered high and in need of intervention when it is >20 for >20 minutes



Concepts of Care for Patients with ^ ICP

S/S of ^ ICP

- ❖ LOC changes
- ❖ N/V
- ❖ Headache
- ❖ Seizures
- ❖ Restlessness /Agitation
- ❖ Pupillary changes
- ❖ VS changes

Early Changes in VS:

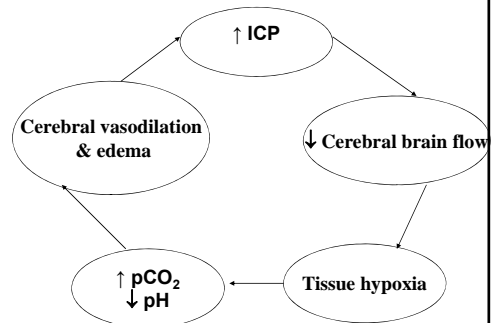
- ❖ Hypertension
- ❖ Tachycardia
- ❖ Abnormal Respirations (Cheyne-Stokes)

Late Changes in VS:

Cushings Triad

- ❖ Hypertension with widening pulse pressure
- ❖ Bradycardia
- ❖ Abnormal Respirations (Agonal, Ataxic)

Concepts of Care for Patients with ^ ICP



Concepts of Care for Patients with \uparrow ICP

Surgical Interventions

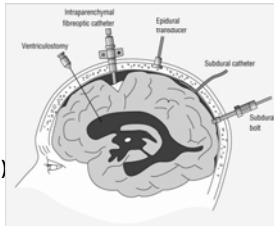
- Tumor resection, Evacuation of hematoma, VPS, Etc.

Pharmacological Intervention

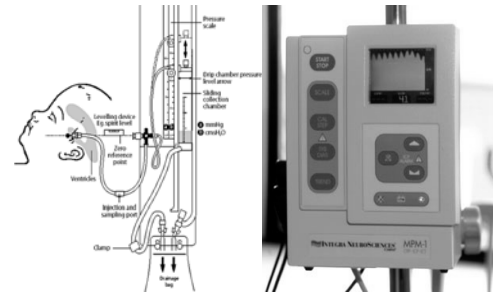
- Mannitol
- Hot Salt (3% NaCl)
- 23% NaCl

Non-Surgical Intervention

- EVD's & Bolts



Oh, About your ICP Monitors

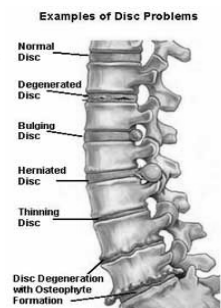


General Post Op Survival Tips for Cranial Patients

- ❖ Change in Neuro assessment
- ❖ Change in behavior (e.g. restlessness, agitation, etc.)
- ❖ General deterioration in status
- ❖ Worsening Headache
- ❖ Nausea and Vomiting
- ❖ Temp
- ❖ Abnormal lab values
- ❖ Seizure activity
- ❖ Increasing urine outputs
- ❖ Bleeding from nose or mouth (may be present in Transphenoidal Hypophysectomy)

Types of Spine Patients

- Spinal Trauma
 - SCI, fractures, etc
- Disc degeneration
- Disc tear
- Disc rupture
- Osteophytes (spurs)
- Slipped vertebrae (Spondylolisthesis)
- Infection
- Spinal Tumors



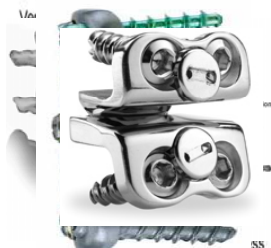
Reasons Surgery Becomes Imperative

- Surgery is a last resort option
- Surgery is usually an option when:
 - The pain is too severe to cope with in the short term
 - The pain is persisting for too long & interfering with quality of life
 - If there is significant muscle weakness from pressure on a nerve

Well, What is That Supposed to Mean?

General Terms to Understand

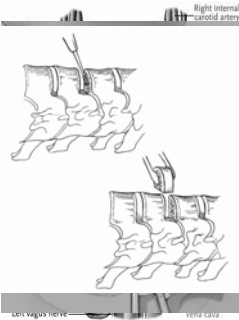
- Laminectomy
- Discectomy
- Fusion w/ or w/o Instrumentation



Types of Surgeries Seen in Your Area

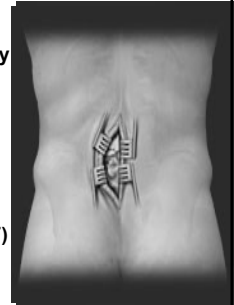
Anterior Cervical Discectomy and fusion (ACDF)

- Anterior approach through neck
- Watch for swallowing / bx
- Pt. may have a posterior fusion as well



Types of Surgeries Seen in Your Area

- Direct Lateral Interbody Fusion (DLIF)
- Posterior Lumbar Interbody Fusion
 - Many times have a lot of pain
- Transforaminal Interbody Fusion (TLIF)



Post Op Assessment of the Spine Patient

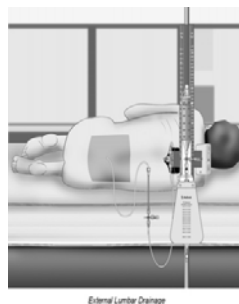
- Always check swallow in ACDF
- Upper Spine: Comprehensive full upper motor exam
- Lower Spine: Comprehensive full lower motor exam
- Sensory Exam : Gross sensory exam comparing both sides
- Special Attention to Bowel and Bladder
- Assess for ^ Headache

Post Op Complications and Considerations: Spine

- Infection
 - Diabetics and obese: At risk for ^ infections. Maintain glycemic control and DVT prevention
- Paralysis
 - Ambulation: Attempt within 4 hours! Make them use their arms/legs, not their backs.
- Wrong Spinal Level
 - Pain Management: Know what you are treating. Spasms, Nociceptive, Neuropathic?
- CSF Leak
- DVT
 - Urinary Retention and Renal Insufficiency: Retention not uncommon. Intervene early. Never let them go 8 hours.
- Death
 - Bowel complications: Are they distended? Are they pooping? Are they passing gas?

Lumbar Drains

- Monitor output q 1 hour
- Monitor dressings q 4 hours
- Use gloves w/ all manipulation of drain
- Know when to call the doctor
- Know when to clamp and call the doctor



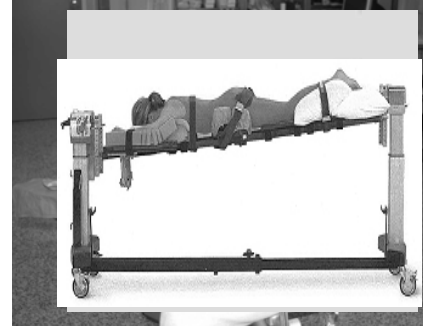
General Post Op Survival Tips for Spinal Patients

- CN deficits
- Change in motor exam
- Change in sensory exam
- Pain that persists and cannot be controlled by medication
- Absence of flatus or distended bowel
- Absence of urine
- Temp that will not come down with antipyretics
- Abnormal lab values

**Intraoperative Need to Knows the
Affect the Post Op Care of the
Neurosurgical Patient**

- Watch for breakdown: pt.s position in OR could contribute to this
- Know blood loss in the OR. This could effect the patients hemodynamic status when they get back from the OR
- Look at electrolytes and I's & O's. Crani patients often receive Mannitol in the OR. They could have imbalances when they get back.

**Intraoperative Need to Knows the
Affect the Post Op Care of the
Neurosurgical Patient**



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