Acute Neurosurgical Consultation Guidelines

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In all cases, ABC's should be evaluated and treated prior to the application of these guidelines.

1 Identify patients eligible for acute transfer

Acute transfer is most often required if a patient meets **at least 1 clinical *and* 1 imaging criteria** from the lists below:

Clinical criteria

- Penetrating head injury
- Altered LOC not attributable to intoxicants
- High ICP (nausea,vomiting, headache) with altered LOC
- Seizures
- Focal Neurological Deficit (cranial nerve or motor deficit)
- Lateralizing signs (e.g. pupillary dilatation, hemiparesis)

Imaging criteria

- Traumatic intracerebral, acute subdural, or epidural hematoma
- Brain contusion
- Non traumatic brainstem or cerebellar intracerebral hemorrhage (ICH) *(Non traumatic cortical ICH if a vascular malformation is suspected)*
- Penetrating cranial object
- Hydrocephalus
- Non traumatic subarachnoid hemorrhage
- Mass Lesion (posterior fossa lesion, midline shift >3mm, hemorrhage within tumor or significant peri-lesional edema in lesion >3cm)

Unique circumstances that might mandate transfer in absence of access to imaging

- Lateralizing signs & GCS ≤8 in institution without access to CT scan
- LP proven subarachnoid hemorrhage (presence of xanthochromia)

If criteria in first step are satisfied, there should be a reasonable expectation of discussion regarding patient transfer.

2 Stabilization and management

For all pathology, in preparation for transfer:

- Attend to ABC's
- Reverse coagulopathy (INR <1.5)
- Perform neurovitals frequently (q1h)
- Treat hypotension & hypoxia
- Consider medical therapy for elevated ICP
- Judicious use of sedation (short acting drugs preferred)
- Intubate if GCS ≤8 or for transport if GCS ≤10

3 Consultation

At this stage **contact CritiCall at 1-800-668-4357** for all patients where physician requires a neurosurgical opinion.

Involve your ICU early if applicable

Intensity of care should be discussed with the patient and/or family if prognosis is poor

Stabilization and management appropriate for the pathophysiology should be initiated

4 Disease specific management

Traumatic brain injury

- Give **Dilantin** 15-20mg/kg if documented seizure or GCS ≤8
- Give **Mannitol** 1.5g/kg for suspected raised ICP
- **Do not use steroids** for raised ICP
- Assume C-Spine injury and maintain spine precautions
- If penetrating object, stabilize but **do not remove**

Subarachnoid hemorrhage

- Keep patient normotensive, avoid 120 ≤ SBP ≥180 (use pressors or antihypertensives as necessary)*
- Consult neurosurgeon prior to giving **Mannitol**

Brain tumors

- **Dilantin** 20mg/kg for documented seizures
- **Decadron** 10mg IV† followed by 4mg IV q6h

Intracerebral hemorrhage

- **Dilantin** 20mg/kg for documented seizures
- Manage and set target BP in consultation with neurosurgeon
- Discuss with neurosurgeon the appropriateness of transfer using CT and clinical criteria

* Age-specific blood pressure values apply to paediatric patients.
† Adjust dosage for paediatric patients.