Postoperative deterioration

General information

When the postoperative neurologic status is worse than pre-op, especially in a patient who deteriorates after initially doing well following surgery, emergency evaluation and treatment are indicated.

Possible etiologies:

1. hematoma

a) intracerebral hemorrhage(ICH):at or remote from surgical site

b) epidural hematoma

c) subdural hematoma

2. cerebral infarction

a) arterial

b) venous infarction:especiallywithsurgeryonoraroundthevenoussinuses

3.postoperative seizure: may be due to inadequate anticonvulsant levels and may be exacerbated by any of the above

4. acute hydrocephalus

5. pneumocephalus

a) tension pneumocephalus

b) simple pneumocephalus: the simple presence of air in the cranium can cause neurologic symptoms even if not under tension (as would commonly occur following the now outdated pneumoencephalogram). Symptoms include lethargy, confusion, severe headache, nausea & vomiting, seizures. Air may be located over the cerebral convexities, in the p-fossa, and/or in the ventricles and usually resorbs with symptomatic improvement in 1–3 days

6. edema: may improve with steroids

a) worsening of cerebral edema: moderate to post-op worsening of the cortical function of the immediately adjacent brain is not unexpected in many operations and is usually transient. However, reversible etiologies (such as subdural hematoma (SDH)) must be ruled out

b) traction or manipulation of cranial nerves may cause dysfunction that may be temporary. Division of cranial nerves can cause permanent dysfunction

7. persistent anesthetic effect (including paralytics): unlikely in a patient who deteriorates after initially doing well post-op. Consider reversing medication given during surgery (caution re hypertension and agitation), e.g. naloxone, flumazenil, or reversal of pharmacologic muscle block

8. vasospasm: following SAH or may be due to manipulation of blood vessels