Headaches in Patients with Shunts

Hydrocephalus Association
June 18, 2010
Cleveland, Ohio

The Example of Hydrocephalus
- May be diagnosed in utero
- Likely to be treated while the brain is growing
- We are now seeing patients in their 40s treated in infancy for hydrocephalus

Potential Conflicts
Consultant: Codman
Educational Grant: Codman

Chronic Daily Headaches
- Definition accepted by International League on Management of Headaches
- Headaches occurring at least for 4 hours per day 15 days per month
- Incidence internationally 4% of population
- 1.8:1 Women to men
- Various etiologies
  - Migraine with family history
  - Tension/muscle contraction headaches
  - Fibromyalgia/Chronic fatigue syndrome
  - Medication overuse headaches
When did the treatment begin

Results

• While direct comparison is not possible analysis of our data suggests that Chronic Daily Headaches occur in 4% of the general population, 25% of children between 19 months and 12 years with shunts and in 41% of adolescents and young adults over the age 12
• Headaches are a significant problem for our patients and interfere with normal life
• 74% of adults with hydrocephalus received their initial treatment in infancy

Headaches As A Function of Age

The Red Badge Of Courage

• As long as there is a shunt the headaches are always the shunt’s fault
• The best treatment is no shunt
• If shunt cannot be removed at least the patient can be made normal biophysically and understand the problems
• Non-invasive ICP monitoring would be very valuable, save many thousands of dollars and many hours in ER
**Medication Overuse Headaches**

- The Danish Experience

- Average frequency of headaches per month 30
- Age 19-60/ Average 33.8
- Average number of revisions prior to medication withdrawal 2.3
- Average number of revisions after detoxification 0.6
- Number of admissions before detox 3.6
- Number of admissions following detox 0.6

**Causes Of Headaches Based On ICP Monitoring**

- Intracranial Hypotension
- Intermittent proximal obstruction
- Intracranial hypertension with a failed shunt and small ventricles (Normal Volume Hydrocephalus)
- Intracranial hypertension with a working shunt (Cephalocranial disproportion)
- Shunt Related Migraine

**Management of Shunt Related Headaches**

- Three of the five causes of shunt related headaches are due to overdrainage and are best first management with programmable shunt or very high pressure valve with device which retard siphoning.
- Never treat headaches in shunted patients with narcotics or strong analgesics for more than three days
- Make certain that the shunt is working and that ICPs are normal

**Following Imaging Study**

- Shunt Clamped
  - Ventricles Enlarge: Patient symptomatic
    - Perform ETV 50%
  - Ventricles Enlarge: Patient asymptomatic
    - Remove Shunt 25%
  - Ventricles do not enlarge: ICP increased
    - Assess for Lumbo-peritoneal shunt
- Normal Volume Hydrocephalus 25%
What Is “Communicating Hydrocephalus”

Conclusion

• When treating shunt related headaches it is essential to prove that the shunt has recreated nature
  – All compartments must communicate freely
  – ICP recumbent is 5-15 mmHg
  – ICP erect is minus 5-5
• Never (understand never) treat shunt related headaches with narcotics
• Is there any way to get the shunt out?