Endoscopic Third Ventriculostomy in Previously Shunted Children Admitted with Shunt Malfunction

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ETV is used for management of shunt failure; malfunction, infection

- 65% success rate in Adult cohort (n=51)
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- 70% Success rate in children (n=63) Neurosurgery 2005 Nov;103(5 Suppl):393-400.
- 80% Success rate in children (n=45) Neurosurgery 2008 Jul;63(1)
- Longer time to failure for ETV in shunted patients comparing to primary ETV
  j neurosurgery 2005 ;103(5):393-400
N=33 (2008-2014)

• Retrospective study
• Age: 5 months to 13 years / Mean 4.5 years
• 67% were male  **** Male / female 22/11
• Most common cause of hydrocephalus: Myelomeningocele and then aqueduct stenosis, Prematurity IVH, Dandy Walker syndrome and tumor
• Time interval between first shunt surgery and ETV was 4 m to 12 y (mean= 20 m)
• Infection= 16/ malfunction=17
• RICP (headache, increased HC, tens fontanel, vomiting, papilledema)= 31
• Seizure=2
• Motor regression=2
• Exclusion criteria: child with coma or posturing, very small size ventricle, unable to perform MRI, no good space in front of basilar artery
• Infection associated with malfunction: shunt removal + antibiotics and then ETV

• Malfunction: mostly blocked proximal catheter but 5 with shunt fracture or dehiscence 
ETV performed after diagnosis/ no approach to shunt
Results:

- No need to revise shunt = 20
- Required approach to shunt after ETV failure = 13
- No serious complication during ETV
- Follow up time after successful ETV: 12-50 m (Mean = 18 m)
- Interval between ETV and new shunt approach: 5-50 m (mean = 25 m)
Conclusion

• Consider ETV in patients with previous shunt and new shunt failure
• Acceptable success rate (68%)
• Long follow up is needed