ENDOSCOPIC THIRD VENTRICULOSTOMY IN CHILDREN: ARE AGE AND AETIOLOGY OF HYDROCEPHALUS PREDICTIVE FACTORS INFLUENCING THE OUTCOME IN PRIMARY AND SECONDARY TREATED PATIENTS? A SERIES OF 328 PATIENTS AND 353 PROCEDURES.

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Since January 1994 to May 2004, at the Pediatric Neurosurgery Department of Regina Margherita Children's Hospital Torino, Italy, 353 Endoscopic Third Ventriculostomies (ETV) were performed in 328 hydrocephalic patients (185 males, 143 females); mean age 104 months (1 day-18 years); mean follow-up 44 months. Aetiology: tumoral (81), acqueductal stenosis (92), cystic malformation (14), cerebral malformation (65), traumatic (4), infective (12) post-haemorrhagic (59). Patients were divided into 2 groups: Group I -ETV as first procedure- (225/353); Group II -ETV as second surgery after VP-shunt- (103/353). 9 ETVs (2,5%) were aborted; 21 patients underwent two and 1 three ETVs. Neither mortality nor permanent morbidity were observed. Transient morbidity was 2% (5 intraventricular haemorrhages due to venous bleeding treated by EVD, 2 intraparenchimal haemorrhage treated conservatively), while minor one was 3,2% (6 subcutaneus CSF leakage, 1 temporary oculomotor impairment, 2 subdural hygroma, all treated conservatively). At last follow-up, 255 patients (77,7%) were shunt-free: 80,2% Group I, 63,4% Group II. The two groups were compared by age: 0-12 mos (61,8% vs 41,6%), 13 mos-5 yrs (72,7% vs 64%), 6-10 yrs (93,5% vs 33,3%), 11-15 yrs (100% vs 83,3%), > 15 yrs (96,6% vs 73,3%). Primary treatment (Group I) achieves better results in tumoral hydrocephalus (89.1%), acqueductal stenosis (90.4%) cystic malformations (87.5%), as compared to Group II (44,5%; 78,9%; 50% respectively). Shunt-free patients are similar in cerebral malformation (47,9% vs 52,4%) or post-haemorrhagic hydrocephalus (50% vs 52,6%); secondary ETV is more successful in post-infective hydrocephalus management (85,7% vs 50% after primary ETV). Primary ETV is reccomended for pure obstructive hydrocephalus, while secondary ETV may achieve good results in not only obstructive, post-haemorrhagic or malformative hydrocephalus. Secondary ETV seems more efficacious in post-infective hydrocephalus.