

elevation and compression of periventricular and subcortical white matter. **Methods:** This study investigates structural alterations in the CC in children diagnosed with infantile hydrocephalus. We examined both macrostructural and microstructural facets of the CC, providing insights into the nature and extent of alterations associated with this condition. 18 patients with infantile hydrocephalus (mean age = 9 years), and 18 age and sex matched typically-developing healthy children, participated in the study. Structural magnetic resonance imaging and diffusion tensor imaging were utilized to assess CC volume and microstructure, respectively. **Results:** Our findings reveal reductions in CC volume, particularly in posterior area, and distinct microstructural disparities, notably pronounced in these same segments. **Conclusions:** Investigating these structural alterations provides an understanding into the mechanisms underlying the effects of infantile hydrocephalus on CC integrity, given its role as a neural bridge. This knowledge offers a more nuanced perspective on neurological disorders and underscores the significance of investigating the CC's health in such contexts.

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Using optic nerve sheath diameter over ventricular size to assess elevated intracranial pressure in pediatric patients with pineal region tumors

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Background: Pineal region tumors are a heterogeneous group of pathologies often symptomatic due to occlusive hydrocephalus leading to elevated intracranial pressure (ICP). High ICP may not always be associated with clinical signs. A non-invasive technique for assessment of ICP is measuring the optic nerve sheath diameter (ONSD). The goal of this study was to determine the utility of preoperative and postoperative ONSD measurements for assessment of elevated ICP in children with pineal region tumors. **Methods:** Retrospective data analysis was performed in patients operated for pineal region tumors at our tertiary care center between 2003 and 2022. Preoperative and postoperative MRI scans were reviewed. Clinical data and ONSD at multiple time points were analyzed and correlated. **Results:** Thirty-four patients with forty operative cases met the inclusion criteria. Hydrocephalus was seen in 80% of patients preoperatively (n=32/40). Presence of hydrocephalus was associated with significantly elevated ONSD preoperatively (p=0.006) and postoperatively (p=0.017). There was significant decrease in ONSD immediately postoperatively (p<0.001), at 3 months (p<0.001) and 12 months (p<0.001). In patients without hydrocephalus, no significant changes in ONSD were observed (p=0.369). **Conclusions:** ONSD is a useful adjunct for the identification of high ICP preoperatively and evaluation of treatment response postoperatively in patients presenting with pineal region tumors.

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How often does digital subtraction angiography change management in CT angiogram negative subarachnoid hemorrhages?

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Background: Subarachnoid hemorrhages (SAH) are emergencies that require expedient workup. While Aneurysms and vascular malformations are a common cause, a subset of cases may lack detectable structural causes. If a CT angiogram (CTA) is negative, the more invasive Digital Subtraction Angiogram (DSA) is used for diagnosis. It is unclear how often DSA alters treatment for CTA negative SAHs. **Methods:** A retrospective review of SAH patients from our institution (Vancouver General Hospital) with a negative CTA with subsequent DSA in the past 25 years. **Results:** Our preliminary analysis included 233 patients. The median age was 55. 105 (45%) were female, and 128 (55%) were male. The average length of hospitalization was 9.6 days, and 226 (97%) were discharged alive. The median number of CTAs and DSAs administered were 2 and 1 respectively. In 12 (5%) cases, DSA detected an abnormality not seen on CTA, which led to endovascular or open surgery treatment in 5 (2%) cases. 5 DSA procedures led to complications including transient neurologic changes and ischemia. **Conclusions:** In SAH patients with CTA negative scans, additional DSA testing identified actionable pathology in only a small minority of cases. Clinicians must weigh the benefit of DSAs in these cases.

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Rate and clinical utility of early postoperative CT head in adult craniotomy

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Background: Postoperative cranial neurosurgical imaging practices are highly variable. We evaluated the rate and utility of early postoperative computed tomography (EPCT, defined as a CT head scan within 24h of surgery) in consecutive adult craniotomies. **Methods:** We retrospectively reviewed consecutive adult craniotomies at the University of Alberta Hospital over a 45-day period (17/09/2022 to 01/11/2022). Electronic medical records were reviewed to extract data on the rate, timing, and utility of EPCT as well as the rate of neurologic deterioration and repeat surgical intervention. **Results:** A total of 56 patients (27 female; 55.5 ± 2.1 yrs, range: 19-84 years) were identified. All patients underwent EPCT, including 10/56 (17.9%) on POD0 and 46/56 (82.1%) on POD1. Surgical complications (bleeding, extensive pneumocephalus, edema, ischemia) were identified in 8/56 (14.3%) of the EPCT, of which 6 (10.7%) were reported to