

(image importing, post-processing, segmentation, fine-tuning and tract export) was recorded. Ease of use, degree of clinician input, program stability, and tract output type were also assessed. Results: 13 patients (31±19 yrs; 6F) were included. Mean workflow duration was significantly longer for MP (22:51 min) versus SV (7:35 min) ($p<0.0001$). Successful WMT reconstruction occurred in 9/13 (69.2%) with MP, versus 5/13 (38.5%) for SV. MP was rated to have superior usability, stability and required less clinician input but technical parameters (e.g. FA) or export object type was inflexible. Conclusions: Synaptive's MP permitted more robust WMT reconstruction with enhanced usability and stability but with significantly longer workflow.

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

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doi: 10.1017/cjn.2025.10311

Background: Routine early postoperative CT (EPCT) in neurologically intact patients is unsupported but still common. Recent studies suggest 135 scans are needed to detect one clinically silent abnormality (Blumrich, 2021). This study assessed the rate and utility of EPCT, defined as a CT head scan within 24 hours of adult craniotomy. Methods: Retrospective review of adult craniotomy cases at the University of Alberta Hospital was conducted over a 10-month period. Data on EPCT rates, timing, adverse findings (complication or unfavourable outcome, e.g., bleeding, extensive pneumocephalus, edema, ischemia), as well as clinical data on neurologic deterioration (e.g., weakness, aphasia, visual impairment, decreased LOC), and repeat surgical interventions were extracted. Results: Of 405 patients (200 female, 54.6 ± 0.8 years, range: 19-89), 96.5% (391/405) underwent EPCT. Adverse EPCTs occurred in 9.2% (36/391), with neurologic deterioration in 7.7% (30/391) and repeat surgery in 2.8% (11/391). Adverse scans and neurologic deterioration were strongly correlated ($X^2=141.1$, $p=1.54e-32$). Only 0.5% (2/405) of EPCT findings prompting surgery lacked prior neurologic deterioration. Conclusions: EPCT in the absence of neurologic deterioration has a low yield for surgical intervention and may be safely omitted.

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The accuracy of MRI reports in detecting neurovascular conflict in hemifacial spasm

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doi: 10.1017/cjn.2025.10312

Background: Hemifacial spasm (HFS) is a disorder of unilateral facial myoclonus that can be psychosocially debilitating. It is

generally caused by microvascular compression of the facial nerve and is amenable to potentially curative surgery. Unfortunately, many patients receive delayed surgical referrals and are instead managed with injections of botulinum toxin to varying benefit. The reason behind late referrals is unclear, but one factor may be misleading diagnostic information; specifically, MRI reports that indicate incorrect or absent neurovascular conflict. The goal of this study was to explore the association between MRI reports and operative findings in HFS patients, with the hopes of identifying opportunities for improved diagnosis and treatment. Methods: We performed a single-center, retrospective chart review of 30 consecutive patients who underwent surgery for HFS between January 2019 and January 2020. Descriptive data were extracted from pre-operative MRI reports and operative notes, then coded for statistical analysis. Results: Pre-operative MRIs were reported by radiologists from 6 provinces. Across all MRIs ($n = 45$), a positive finding was only identified in 51.1%. All 30 patients had clear neurovascular conflict noted in surgery. Conclusions: There is a need for improved diagnostic accuracy in HFS, with the goal of expediting surgical referrals and possible cure.

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Radiographic factors associated with success of endoscopic third ventriculostomy (ETV): retrospective cohort study

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doi: 10.1017/cjn.2025.10313

Background: This retrospective cohort study investigates radiographic factors linked to the success of Endoscopic Third Ventriculostomy (ETV) for hydrocephalus. Methods: We examined 48 patients who underwent ETV between August 2011 and March 2023. Radiographic factors analyzed included the basal skull angle, modified basal skull angle, interpeduncular cistern diameter, prepontine diameter, and approach angle to the third ventricle floor. Statistical analysis was performed using R studio. Results: The cohort had a median age of 41 years, with 22 females. Pathologies included aqueductal stenosis (21 cases), tectal tumors (7), and IVH (5). The mean ETV Success Score (ETVSS) was 76.7. Of the 21 failures, 16 required a shunt. A strong correlation was found between ETVSS and procedure success ($p<0.001$). Modified basal skull angle ($p=0.028$), interpeduncular cistern diameter ($p<0.001$), and approach angle ($p<0.001$) were all associated with ETV success. Decision tree analysis showed that the inclusion of approach angle to ETVSS improved sensitivity and specificity, reaching 1.0 for both. Conclusions: In conclusion, the study highlights that radiographic factors, particularly the modified basal skull angle, interpeduncular cistern diameter, and approach angle, are key predictors of ETV success. This information can assist neurosurgeons in planning cases more effectively.