748 patients undergoing CTA for blunt cervical trauma, assaults, and strangulation (2013–2023) was conducted. After exclusions, 344 CTA reports were analyzed. Inclusion criteria: patients ≥18 years with complete medical records who underwent CTA for trauma evaluation. Exclusions: penetrating injuries, preexisting cerebrovascular abnormalities, incomplete records, or CTA not performed. Results: BCVI was identified in 38/344 cases (11%), with 55% classified as Grade I (Biffl). Posterior circulation (71%) and internal carotid arteries (36.8%) were most affected. Eight BCVI cases (21%) did not meet EDC; MVCs accounted for seven. MVCs (68%) and falls (29%) were the leading causes, while no BCVIs were observed in assaults or strangulations. Conclusions: MVCs and high-impact falls pose the highest BCVI risk, warranting CTA beyond EDC indications. In contrast, CTA may be less necessary for assaults and strangulations. Further studies across trauma centers are needed to confirm these findings.

Neurovascular and Neurointerventional

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Isolated intraventricular hemorrhage presenting as reversible cerebral vasoconstriction syndrome

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Background: Reversible cerebral vasoconstriction syndrome (RCVS) is defined clinically by headaches associated sometimes with seizures and neurological deficits, and radiologically with intermittent spasms in cerebral arteries that would resolve in 3 months. It can present with multiple bleeding patterns. Intraventricular hemorrhage (IVH) is a rare presentation for RCVS as there are 4 reported cases. Methods: This is a case report and review of literature. Results: A 36-year-old patient sought medical attention due to the acute onset of thunderclap headache. A computed tomography (CT), and CT angiogram (CTA) of his head and neck were done. It showed large IVH associated with hydrocephalus and no underlying vascular abnormalities. An external ventricular drain was placed and he was on nimodipine. A CTA was done on day 17 because he had acute global aphasia, right hemibody weakness, and right homonomous hemianopia, which showed severe diffuse intracranial stenosis involving the circle of Willis. He was taken to the angiography suite for chemical spasmolysis with verapamil. There was radiographic improvement and clinical resolution. Conclusions: This case highlights the rarity of RCVS presentations and further signifies the utility of intraarterial spasmolytics as an adjunct in the diagnosis of difficult cases. Further retrospective and prospective data are needed.

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Evaluation of endovascular access complexity on stroke patient's initial imaging: an agreement study

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Background: Neck vessel imaging is often performed in hyperacute stroke to allow neurointerventionalists to estimate access complexity. This study aimed to assess clinician agreement on catheterization strategies based on imaging in these scenarios. Methods: An electronic portfolio of 60 patients with acute ischemic stroke was sent to 53 clinicians. Respondents were asked: (1) the difficulty of catheterization through femoral access with a regular Vertebral catheter, (2) whether to use a Simmons or reverse-curve catheter initially, and (3) whether to consider an alternative access site. Agreement was assessed using Fleiss' Kappa statistics. Results: Twenty-two respondents (7 neurologists, 15 neuroradiologists) completed the survey. Overall there was slight interrater agreement (κ=0.17, 95% CI: 0.10–0.25). Clinicians with >50 cases annually had better agreement (κ=0.22) for all questions than those with fewer cases (κ=0.07). Agreement did not significantly differ by imaging modality: CTA (κ=0.18) and MRA (κ=0.14). In 40/59 cases (67.80%), at least 25% of clinicians disagreed on whether to use a Simmons or reverse-curve catheter initially. Conclusions: Agreement on catheterization strategies remains fair at best. Our results suggest that visual assessment of pre-procedural vessels imaging is not reliable for the estimation of endovascular access complexity.

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Carotid artery coil extrusion: a rare but potential complication of endovascular coiling in post radiated neck

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Background: Endovascular coiling is a minimally invasive technique for managing carotid blowout in head and neck

malignancies. Internal carotid artery (ICA) coil extrusion is a rare complication of this procedure, with an increased risk in post radiated neck. Methods: We present a case of advanced nasopharyngeal carcinoma with cervical nodal metastasis treated with chemoradiation and complicated with left ICA blowout which was successfully coiled and embolized endovascularly. Results: He was subsequently presented with left-sided nosebleed. Imaging demonstrated patent occluded left ICA, however with extrusion of coil material into the nasopharynx which was most likely attributed by the soft tissue necrosis in the left parapharyngeal space. He was managed conservatively as his symptoms was mild and self-limiting. Subsequent follow-up imaging confirmed stable coil extrusion. Conclusions: This case highlights the importance of identifying and assessing coil extrusion on imaging, which includes assessment of the location of extrusion, vessel occlusion patency, and potential causes of extrusion. Goals of management for symptomatic patients aims to remove extruded foreign bodies and stabilize the wound to prevent massive bleeding or further coil migration.

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Mapping the neurointerventional radiology landscape in Canada: trends in growth, accessibility, and training opportunities

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Background: Neurointerventional radiology (NIR) is a growing field, offering minimally invasive treatments for cerebrovascular conditions like ischemic stroke. However, no comprehensive analysis of the current NIR landscape in Canada exists. This study aims to evaluate the NIR landscape through analysis of hospital-based services and training programs. Methods: Publicly available hospital data, fellowship programs, and national workforce statistics were analyzed to assess the expansion of NIR centers, practitioners, and services in Canada. The analysis focused on temporal trends in geographic distributions, specialists, and training programs. Results: From 2022 to 2024, the number of NIR centers increased by 20% (from 25 to 30), with new sites established in British Columbia, Quebec, and Newfoundland. Seven accredited RCPSC NIR training programs were identified, with 2 new programs expected to begin training fellows by 2030. Annual trainee enrollment also increased by about 10% per year, with over 50% being from radiology backgrounds. Endovascular thrombectomy, the most common NIR procedure, has seen an annual volume increase of approximately 13% since 2019. Conclusions: NIR is experiencing substantial growth in Canada across centers and training sites, aligning with public health goals. However, continued investment in infrastructure and workforce development is required to ensure equitable access to life-saving neurointerventional therapies nationally.

Other Neuroradiology

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The role of large language models in neuroradiology: a scoping review and thematic analysis

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Background: Large language models (LLMs) have gained popularity in medicine, however, their roles in neuroradiology remain underexplored. This study aimed to evaluate the current landscape, identify evidence gaps, and propose future directions for LLMs in neuroradiology. Methods: A systematic literature search of PubMed, Embase, Web of Science, and Scopus was conducted to identify relevant studies published between January 1, 2010, and October 1, 2024. Two reviewers screened eligible studies and selected original research applying LLMs in neuroradiology for inclusion. Included studies were evaluated using thematic and geographical analyses to identify trends. Results: Of 287 identified studies, 57 met the inclusion criteria. Findings revealed a significant upward trend in publications since 2018, with an annual growth rate of 78.2%. Three main themes emerged: Operational Workflow Optimization (n=26, 45.6%), Diagnostic Decision Support (n=20, 35.1%), and Education and Training (n=11, 19.3%). Geographically, most studies originated from North America (n=23, 40.4%), Europe (n=19, 33.3%), and Asia (n=12, 21.1%), with limited contribution from other regions (n=3, 5.3%). Key knowledge gaps included strategies to mitigate hallucinations, enhance transparency, and safeguard patient privacy. Conclusions: LLMs are being applied in neuroradiology to support diagnostics, streamline workflows, and enhance education. Future research should prioritize clinical validation, promote ethical practices, and expand global involvement.

Neurosurgery (CNSS)

Functional Neurosurgery and Pain

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Occipital nerve stimulation for refractory craniofacial pain

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Background: Occipital nerve stimulation (ONS) is a promising therapy for craniofacial pain syndromes refractory to conventional treatments. This study evaluates the long-term efficacy