

OTHER NEUROSURGERY

P.072

History of the endoscopic approach to the skull base with a highlight on Canada's contributions

MD Cusimano (Toronto)* J Skulsampaopol (Toronto)

doi: 10.1017/cjn.2024.178

Background: The Endoscopic Transphenoidal Approach to the Skull Base (ETSS) is now used internationally for a wide variety of pathologies ranging from CSF leaks to complex brain tumours. Methods: Case illustrations. Historical review of the evolution of ETSS with a focus on Canada's contributions. Results: Canadians have been major contributors in the development and advancement of surgery of the skull base, particularly through endoscopic means. These will be highlighted with particular emphasis of those of Hardy, Cusimano, Kassam, Gentili, and others. Conclusions: Canada has been and continues to be an international leader in development and treatment of patients with skull base lesions, particularly those with lesions of the skull base amenable to ETSS.

NEURORADIOLOGY (CSNR)

NEUROIMAGING

P.073

Spontaneous fluctuation of contrast enhancement in adult pilocytic astrocytoma and other low-grade brain tumors

T Rohringer (Toronto)* SK Ong (Toronto) AF Gao (Toronto)
P Alcaide-Leon (Toronto)

doi: 10.1017/cjn.2024.179

Background: Pilocytic astrocytoma and other circumscribed low-grade brain tumors can exhibit spontaneous enhancement changes despite stable size and clinical status. We aimed to describe this phenomenon in adults. Methods: We performed a retrospective review of our MRI database (2011-2021) to identify cases with enhancement changes in otherwise stable tumors. We searched for reports containing: "pilocytic", "pilomyxoid", "RGNT", "rosette", "glioneuronal", "DNET", and "dysembryoplastic". Exclusion criteria included WHO grade 3/4 tumors, patients <19 years, equivocal diagnostic findings, and no serial MRIs. We reviewed 238 patients. Results: We identified 12 adult patients with the desired phenomenon: 6 pilocytic astrocytoma, 1 pilomyxoid astrocytoma, 2 rosette-forming glioneuronal tumor, 1 unverified low-grade glioma, and 2 cases without biopsy. Seven were untreated, while five were residual or recurrent tumors. Six showed a pattern of new/increasing and subsequent decreasing/disappearing enhancement over 1-4 years. One exhibited spontaneous regression of enhancement over 1 year. Five showed repeating cycles of increasing and decreasing enhancement over

longer monitoring periods of 7-15 years, with mean duration of increasing enhancement prior to decline of 21.4 months (SD 5.9). Conclusions: Spontaneous contrast enhancement fluctuation in adult pilocytic astrocytoma and other circumscribed low-grade brain tumors can occur, and on its own should not be misconstrued as evidence of tumor progression/regression.

OTHER MULTIDISCIPLINARY

P.074

Assessing the emergence and evolution of artificial intelligence and machine learning research in neuroradiology

SS Haile (Toronto)* A Boutet (Toronto) AZ Wang (Toronto)
H Son (Toronto) M Malik (Toronto) V Pai (Toronto) M Nasralla (Toronto) J Germann (Toronto) A Vetkas (Toronto) F Khalvati (Toronto) BB Ertl-Wagner (Toronto)

doi: 10.1017/cjn.2024.180

Background: Interest in artificial intelligence (AI) and machine learning (ML) has been growing in neuroradiology, but there is limited knowledge on how this interest has manifested into research and the field's trends, challenges, and future directions. Methods: The *American Journal of Neuroradiology* was queried for original research articles published since inception (Jan. 1, 1980) to Sept. 19, 2022 that contained any of the following key terms: "machine learning", "artificial intelligence", or "radiomics". Articles were screened, categorized into Statistical Modelling (Type 1), AI/ML Development (Type 2), or End-user Application (Type 3) and then bibliometrically analyzed. Results: A total of 124 articles were identified with 85% being non-integration focused (Type 1 n = 41, Type 2 n = 65) and the remaining (n = 18) being Type 3. The total number of articles published grew two-fold in the last five years, with Type 2 articles mainly driving this growth. While most (66%) Type 2 articles were led by a radiologist with 55% possessing a postgraduate degree, a minority of Type 2 articles addressed bias (15%) and explainability (20%). Conclusions: The results of this study highlight areas for improvement but also strengths that stakeholders can consider when promoting the shift towards integrating practical AI/ML solutions in neuroradiology.

OTHER NEURORADIOLOGY

P.075

Anatomy and pathology of the lacrimal apparatus: from the sac to the nasal fossa. what the neuroradiologist should know!

J Ardawi (Kingston)* D Tampieri (Kingston)

doi: 10.1017/cjn.2024.181

Background: The aim of our educational exhibit is to review the anatomy and pathology encountered and often overlooked of