P.116

Improving the NeuroD1-AAV-based gene therapy intracerebral injection protocol for optimal neuronal recovery

G Taheri (Kingston) BA Masotti (Kingston)* GR Garcia (Kingston) R Wan (Kingston) M Wilson (Kingston) DJ Cook (Kingston)*

doi: 10.1017/cjn.2025.10271

Background: Ischemic stroke increases the number of glial cells, such as astrocytes, and causes neuronal death, disrupting the neuron-to-glia balance, contributing to neurodegeneration. Treatment with NeuroD-adeno-associated virus (NeuroD1-AVV) may enhance neuronal transdifferentiation and improve motor function, but the optimal administration protocol for the drug has yet to be determined. Methods: Non-human primates (NHPs) underwent middle cerebral occlusion surgery. Fourteen days poststroke, subjects received NeuroD1-AVV according to two distinct protocols: Three high doses and three low doses. Neurological deficits and cognitive performance were measured using the NHP stroke scale and coloured glove shift of set task, respectively. Nine months post-stroke, NHPs were euthanized. Brains were harvested and stained for neuronal (NEUN and MAP2) and glial (GFAP, IBA1) markers using immunofluorescence techniques. Results: Our results indicate that both protocols effectively rebalance the neuron-to-glia cell ratio by decreasing GFAP+ cells in the P1 and P2 NHPS ipsilateral hemispheres. No cognitive performance differences were found across groups; however, P2 had better NHPSS outcomes from months 2 to 9. Conclusions: The findings support both injection protocols in restoring histological balance, with P2 being more effective for motor function rehabilitation. Investigations into neuronal functionality and development levels continue.

NEURORADIOLOGY (CSNR)

NEURO-ONCOLOGY

P.118

A rare case of eccrine carcinoma with perineural metastases - a rare cause of facial pain

O Marushchak (Toronto) L Alshafai (Toronto)*

doi: 10.1017/cjn.2025.10272

Background: Eccrine carcinoma is a rare skin tumor arising in eccrine sweat glands with a predilection for older adults. Over 30% of cases occur in the head and neck. Local and distal metastases are common. Prognosis is poor with regional recurrence in up to 19% of cases. Imaging is indicated in high-risk disease. Methods: We present a case report of eccrine carcinoma in the scalp with perineural metastasis to the left trigeminal nerve. Results: A seventy-nine-year-old male with a history of left temporal scalp pre-cancerous lesion treated with liquid nitrogen two years prior presented with left facial pain and paresthesia. The gadolinium-enhanced MRI head showed a tiny sub-centimetre spiculated subcutaneous lesion in the left temporal scalp and perineural enhancement along the left auricotemporal, V3 and trigeminal nerves. Subsequent excisional biopsy of the temporal lesion showed a poorly differentiated eccrine carcinoma without local perineural invasion. Conclusions: Undifferentiated facial pain is a frequent indication for head imaging, usually with low diagnostic utility. However, scrutiny for perineural enhancement is necessary to avoid missing a potentially deadly process. Eccrine carcinoma is a rare type of skin cancer. Small, painless, indolent primary lesions may be overlooked clinically. Radiologists can affect outcomes in these cases.

NEUROIMAGING

P.120

Intracranial extension of temporomandibular joint (TMJ) lesions: A review of neuroimaging and clinical features

H McKee (Toronto) T Rohringer (Toronto) A Yang (Toronto) Y Patel (Toronto) S Hiremath (Toronto) A Boutet (Toronto)*

doi: 10.1017/cjn.2025.10273

Background: Intracranial extension of temporomandibular joint (TMJ) lesions is uncommon and may lead to radiological misinterpretation. This review aimed to identify clinical and radiological features of these lesions and whether radiological misinterpretation contributed to delayed or incorrect intervention. Methods: A comprehensive search of MEDLINE, SCOPUS, and Embase identified 2,256 records. Studies with clinical and imaging details of TMJ lesions extending intracranially were included. Reviews and non-English studies were excluded. After screening, 113 studies involving 132 patients were included. Results: Patients had an average symptom duration of 32 months until diagnosis (47% female, mean age 50±15 years). The most common diagnoses were pigmented villonodular synovitis/tenosynovial giant cell tumor (46%) and synovial chondromatosis (24%). Neurological symptoms were reported in 48% of cases, most frequently hearing loss (35%). Diagnostic accuracy increased from 38% to 62% when both CT and MRI were used. Most lesions were non-enhancing on CT (85%) and MRI (74%), and demonstrated no edema (96%). In one case, a ganglion cyst was misdiagnosed as a cystic brain tumor, leading to neurosurgical resection. Conclusions: TMJ lesions extending intracranially have neurological symptoms in less than half of cases and demonstrate no enhancement or edema. Familiarity with these characteristics is essential to avoiding misdiagnoses and ensuring timely management.