Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.
Methods
From May 2020 to February 2021, 925 patients, aged ≥7 years and participants who met the inclusion criteria were enrolled from the neurology clinics. We re-analyzed patients who experience headache with/without vertigo symptoms and two groups were studied according to the patient’s age. Logistic regression analysis was used to evaluate the association between headache and vertigo. First, we reviewed vertigo with diagnosed 281 and 570 headache patients, and 31 vertiginous headache. Second, common types of primary headache patients were included. Third, the vertigo was classified into 2 groups: peripheral or central types.

Results
Of the 925 outpatient, headache of 570 (61.6%) and vertigo of 281 (30.3%) were reported. The frequency of vertigo in headache patients was significant relationship with ageing. Total 31 headache related vertigo patients were divided into two groups (peripheral, n = 27, central, n = 4) and proportion of peripheral vertigo has a positive relevance with headache.

Conclusions
The clinical relevance of vertigo in headache patients is associated with increasing age spectrum. The proportion of peripheral vertigo was correlated with vertiginous headache groups. The findings of our study may provide direction for potentially useful diagnostic and therapeutic approach to the attack of vertigo such problem in vertiginous headache patients.

doi:10.1016/j.jns.2021.119331

119332
Surgical treatment for pain attributed to a lesion or disease of the trigeminal nerve – A single-center experience
Miguel Miranda, Sofia Delgado, Marta Magriço, Pedro Da Cunha, Luis Marques, Carla Reizinho, Sérgio Figueiredo, José Cabral
1Hospital de Cascais Dr. José de Almeida, Department of Neurology, Alcabideche, Portugal, 2Hospital Professor Doutor Fernando Fonseca, Department of Neurology, Amadora, Portugal, 3Centro Hospitalar Lisboa Ocidental, Department of Neurology, Lisbon, Portugal, 4Centro Hospitalar Lisboa Ocidental, Department of Neurosurgery, Lisbon, Portugal

Background and aims
According to ICHD-3, “Pain attributed to a lesion or disease of the trigeminal nerve” (PLDTN) includes both trigeminal neuralgia (TN) and painful trigeminal neuropathy. Despite initial preference for medical management, patients with refractory pain or intolerant to drug therapy side effects are candidates for surgical therapy. We aimed to characterize a single-center population of patients selected for surgical management of PLDTN, accessing surgery effectiveness and patient satisfaction.

Methods
Clinical information from patients undergoing surgery for PLDTN between January 2010 and March 2021 at CHLO was reviewed retrospectively. Surgery effectiveness and patient satisfaction was evaluated resorting to the Penn Facial Pain Scale-Revised (PFPSR) and the Patient’s Global Impression of Change Scale (PGICS), applied by the telephone.

Results
Twenty-three patients underwent surgical therapy, with a time from symptom onset to first neurosurgery appointment of 6.43 ± 5.44 years (mean ± standard deviation). By the first appointment, patients were medicated with 3 ± 2 drugs for pain control. Most patients had classical TN (73.9%), followed by secondary (8.7%), idiopathic TN (8.7%) and painful post-traumatic trigeminal neuropathy (8.7%). Microvascular decompression (MD) was performed in 65.2%, Gasserian ganglion radiofrequency in 17.4%, partial rhizotomy (PR) in 4.3% and MD + PR in 13.0% of cases respectively. Thirteen patients (56.5%) answered to the telephone survey with an average surgery satisfaction score (PGICS) of 5.77 (1 to 7). Half of these patients became medication free after surgery.

Conclusions
Surgery for PLDTN is an effective management option that prevents polymedication and pain persistence over the years if earlier referral to Neurosurgery outpatient clinic.

doi:10.1016/j.jns.2021.119332

119333
Case report: atypical migraine as a sentinel symptom for SARS-COV2 infection
Ennio Pucci, Marco Quintilio Falvo, Valentina Nava, Marta Lagorio
1IDR Santa Margherita, Alzheimer’s Nucleus Asp, Pavia, Italy, 2University of Pavia, Graduate School of Geriatrics and Gerontology, Pavia, Italy

Background and aims
Migraine without aura is the most frequent of the forms of migraines (about 60% - 80% of all forms of migraines). There are many causes that can trigger migraines, including infections (IHS ICDH-3).

Methods
69 year old woman. Professional nurse. Family history of migraine (maternal line). Arising in school age. Diagnosis made according to the IHS ICDH-3 criteria. The patient presented 2–3 crises / month with pulsating pain in the bilateral frontotemporal region, medium-strong intensity, associated with photo-phonophobia, nausea, sometimes vomiting. Duration 24–36 h. Triggering factors: menstruation and psychophysical stress. After menopause (49 years) reduction of intensity, duration and frequency with 1–2 crises / month related stress lasting 12–24 h and responsive to NSAID intake. No preventive therapy performed.

Results
On 29.11.2020 episode of atypical headache (described as different from other episodes) with very strong, throbbing, stabbing, burning pain in the bilateral front-temporal region, unresponsive to the intake of NSAIDs. Duration 24 h. No other symptoms reported, apiretic. 30.11.2020: TNF fast: +. Molecular TNF: positive for SARS COV 2. During the period of infection headache present whenever the patient had fever and was unresponsive to paracetamol.

Conclusions
In our case report, atypical migraine can be considered a sentinel symptom of an initial infection. The patient works as a professional nurse in the ward which had become Covid on 3.11.2020.

doi:10.1016/j.jns.2021.119333