

VOLUME LXXVI, ISSUE 6, JUNE 2023

ISSN 0043-5147

E-ISSN 2719-342X

# Wiadomości Lekarskie Medical Advances



Official journal of Polish Medical Association has been published since 1928



INDEXED IN PUBMED/MEDLINE, SCOPUS, EMBASE, EBSCO, INDEX COPERNICUS,  
POLISH MINISTRY OF EDUCATION AND SCIENCE, POLISH MEDICAL BIBLIOGRAPHY

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## CASE STUDY

**CHRONIC MIGRAINE. CASE REPORT**

DOI: 10.36740/WLek202306125

**Oleksandr Pulyk<sup>1</sup>, Myroslava Hyryavets<sup>1</sup>, Vladyslava Ahij<sup>2</sup>**<sup>1</sup>UZHHOROD NATIONAL UNIVERSITY, UZHHOROD, UKRAINE<sup>2</sup>LTD DIA-LAB, UZHHOROD, UKRAINE**ABSTRACT**

We report a case of a 40-year-old male who had the clinical signs of chronic migraine. The diagnosis of chronic migraine is based on International Headache Society diagnostic criteria. The patient was bothered by unilateral and localized pain in the frontotemporal and ocular area, which lasts 4–72 hours, sensitivity to light and sound. Headache has pulsating quality, moderate or severe pain intensity. Attacks of headache bothered about 15–20 days a month. According to the standard MR scanning protocol, single areas of increased MR signal were detected in the mode T2, Flair, which do not limit diffusion and do not cause a change in the MR signal in the SWI mode. The foci are located subcortically in the white matter of the frontal lobes of the brain, corresponding to foci of gliosis of the white matter of the frontal lobes. The patient received antiepileptic drugs,  $\beta$ -Blockers, triptans, antidepressants. The patient is recommended to inject botulinum toxin.

**KEY WORDS:** chronic migrane, primary headache, MRI

Wiad Lek. 2023;76(6):1499-1501

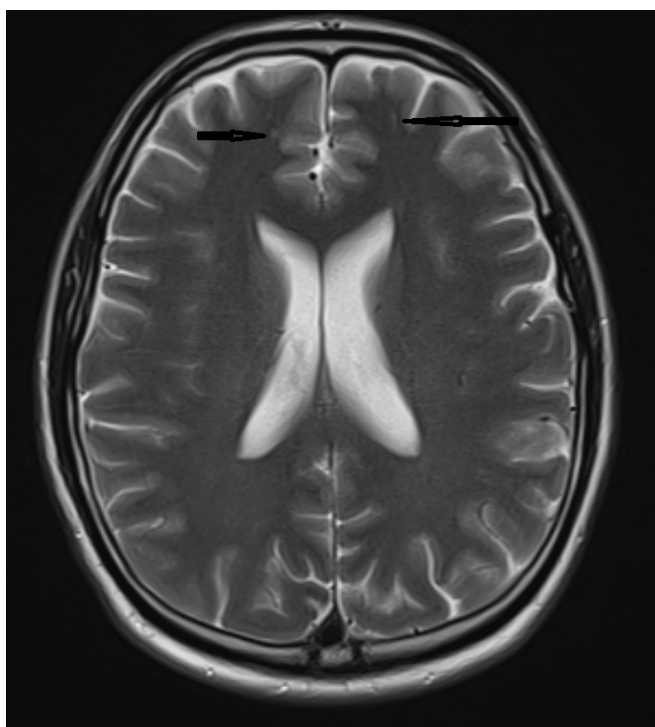
**INTRODUCTION**

Chronic migraine is one of the most common and debilitating neurological disorders, it is often underdiagnosed and undertreated. In one study, only 25% of patients with chronic migrane received a correct diagnosis [1]. According to the Global Burden of Disease study in 2019, migraine remains the second most common cause of disability [1]. The adjusted prevalence of migraine is highest in North America, followed by South and Central America, Europe, Asia, and Africa [2]. Chronic migraine, a condition characterized by the experience of migrainous headache on at least 15 days per month, is highly disabling [3]. Many patients with chronic migraine also have medication overuse, defined as using a compound analgesic, opioid, triptan or ergot derivative on at least 10 days per month [3]. Chronic migraine imposes a substantial economic burden on society [3]. Chronic migraine is an important treatable cause of neurological disability. It is vital to make a diagnosis and ensure that any concomitant medical or psychological conditions are treated in parallel with interventions aimed at reducing the biological tendency to headaches [4]. Specific trials in patients with chronic migraine are sparse, and in many cases the evidence for the use of standard preventive medications has to be extrapolated from studies in patients with high-frequency episodic migraine [3]. New acute and preventive options should become available

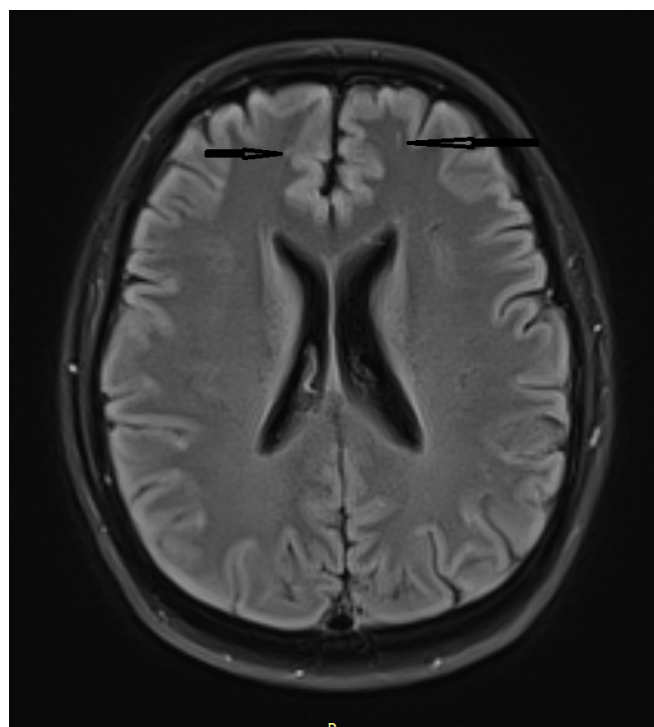
over the next 3–6 years, including calcitonin gene-related peptide (CGRP) antagonists and antibodies, and drugs targeted at other serotonin receptor subtypes [3]. The diagnosis of migraine is based on patient history, based on International Headache Society diagnostic criteria [2], these features must not have been attributable to another disorder too. The choice of laboratory and/or imaging studies is determined by the individual presentation [2]. Magnetic resonance imaging together with clinical data migraines identify areas of white matter in both hemispheres of the brain hypertensive in T2 mode, Flair, which is not related to stroke, chronic small vessel deep white matter ischemic change, multiple sclerosis/demyelination, cerebral vasculitis [5]. Migraineurs, male and female, have a 2.5-fold increased risk of subclinical cerebellar stroke and those with migraines with aura and increased headache frequency are at the highest risk [2]. Chronic migraine is associated with higher headache-related disability/impact, medical and psychiatric comorbidities, health care resource use, direct and indirect costs, lower socioeconomic status, and health-related quality of life [4].

**THE AIM**

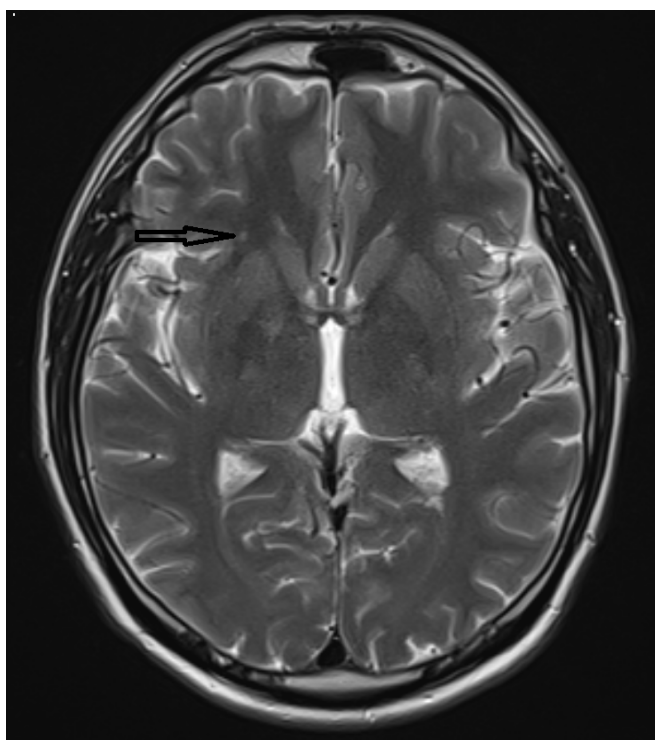
To describe the course and results of neuroimaging of chronic migraine in the patient.



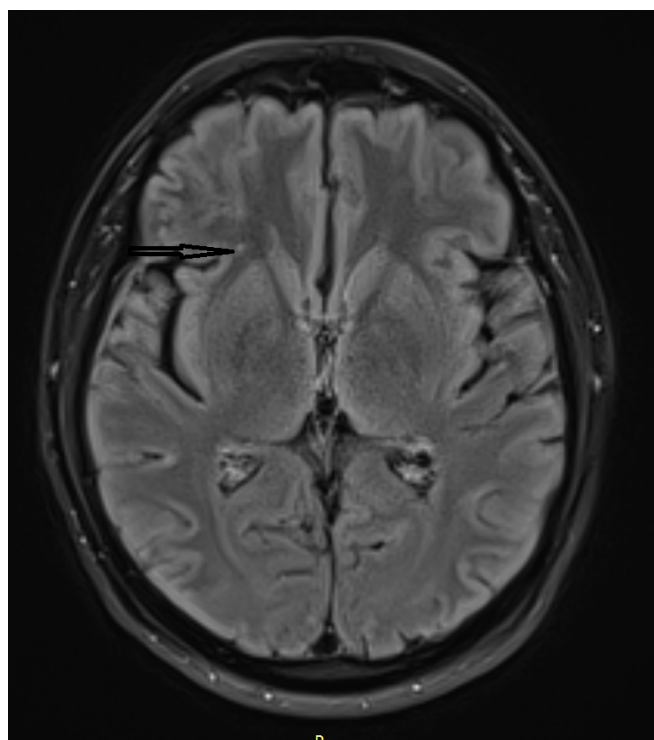
**Fig. 1.** Axial T2-weighted MRI. In the subcortical white matter of the frontal lobes, the presence of lesion of increased MR signal is determined (indicated by an arrow).



**Fig. 3.** Axial T2-weighted MRI. In the subcortical white matter of the frontal lobes is determined by the presence of areas of increased MR signal (indicated arrow).



**Fig. 2.** Axial T2-weighted MRI. In the subcortical white matter of the right frontal lobe, the presence of a focus of increased MR signal is determined (indicated by an arrow).



**Fig. 4.** Axial T2-weighted MRI. In the subcortical white matter of the right frontal lobe, the presence of areas of increased MR signal is determined (indicated by an arrow).

## CLINICAL CASE

A 40-year-old male consulted a neurologist with complaints on unilateral and localized pain in the frontotem-

poral and ocular area, which lasts 4–72 hours, sensitivity to light and sound. Headache has pulsating quality, moderate or severe pain intensity. The patient has been ill for 8 years.

Repeatedly examined in Ukraine and abroad. The patient received antiepileptic drugs (topiramate, gabapentin, valproic acid, clonazepam),  $\beta$ -Blockers (propranolol), triptans (sumatriptane, zolmitriptane, rizatriptane, eletriptan), antidepressants (duloxetine, venlafaxine, amitriptyline).

On neurological examination, we found normal mental status and higher functions and no meningismus. No cerebellar ataxia, sensitivity, surface and deep tendon reflexes were normal, pathological reflexes were not found. A general physical examination was normal. Blood tests as well as liver and kidney function were normal. MRI of the brain (1,5 Tl without enhancement) showed the following changes (Fig 1-4). During the MRI examination of the patient according to the standard scanning protocol, single areas of increased MR signal were detected in the

mode T2 (Fig.1, Fig.2), Flair (Fig.3, Fig.4), which do not limit diffusion and do not cause a change in the MR signal in the SWI mode. The foci are located subcortically in the white matter of the frontal lobes of the brain, corresponding to foci of gliosis of the white matter of the frontal lobes. The diagnosis of chronic migraine based on clinical symptoms, International Headache Society diagnostic criteria and MRI brain findings was done.

## CONCLUSIONS

Since the patient with chronic migraine was taking antidepressants, antiepileptic drugs,  $\beta$ -Blockers and triptans - botulinum toxin administration was recommended.

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## ORCID and contributionship:

Oleksandr Pulyk: 0000-0002-8717-047X

Myroslava Hryavets: 0000-0001-8419-0590

Vladyslava Ahij: 0000-0003-0677-7278

## Conflict of interest:

*The Authors declare no conflict of interest*

## CORRESPONDING AUTHOR

**Oleksandr Pulyk**

Uzhhorod National University

14 Universytetska St., Uzhhorod 88000, Ukraine

e-mail: apulyk@gmail.com

**Received:** 10.10.2022

**Accepted:** 30.05.2023

**A** - Work concept and design, **B** - Data collection and analysis, **C** - Responsibility for statistical analysis, **D** - Writing the article, **E** - Critical review, **F** - Final approval of the article

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