

Case report / Olgu sunumu**Dissociative aggression triggered by headache: a case report**

Bariş METİN¹, Sinem Zeynep METİN,²
Yasin ABANOZ,³ Hamide LAÇİN,⁴ Kemal ARIKAN^{2,4}

ABSTRACT

Headache is generally perceived as a negative symptom focused to self. On the other hand there are reports suggesting that patients suffering from pain and especially headache can be aggressive. The precise nature of the link between headache and aggression is not known. Here we describe a homicidal attack, triggered by headache, in a middle aged man. Patient's background and the characteristics of the attack suggested a dissociative behavior. The case shows that headache may be a trigger for homicidal behavior. Case control studies are needed to determine the prevalence of aggressive tendency in patients with headache. (*Anatolian Journal of Psychiatry* 2021; 22(x):xxx-xxx)

Keywords: headache, homicidal behavior, dissociative disorder, OCD, executive problems

Baş ağrısı ile tetiklenen dissosiyatif agresyon: Olgu sunumu**Öz**

Baş ağrısı genelde kişinin kendisiyle sınırlı kalan negatif bir belirti olarak algılanır. Bunun yanında ağrı ve özellikle baş ağrısı çeken bireylerin saldırgan davranış gösterebildiğine ilişkin yayınlar vardır. Baş ağrısı ve agresyon arasındaki bağlantı mekanizması ise net değildir. Bu yazıda bir bireyde baş ağrısı ile tetiklenen bir homisid atağı anlatılmıştır. Hastanın geçmişi ve atağın özellikleri dissosiyatif bir davranışı düşündürmektedir. Bu olgu baş ağrısının homisid tetikleyicisi olabileceğini düşündürmektedir. Baş ağrısı hastalarında agresyonun sıklığını araştırmak için olgu kontrol çalışmalarına gerek vardır. (*Anadolu Psikiyatri Derg* 2021; 22(x):xxx-xxx)

Anahtar sözcükler: Baş ağrısı, homisidal davranış, dissosiyatif bozukluk, OKB, yürütücü işlev bozukluğu

INTRODUCTION

The association between pain and aggressiveness has been described previously in patients suffering from pain.¹ From a physiological point of view, pain is a strong autonomic stimulator, and it may induce aggressive behavior by stimulating lateral hypothalamus via amygdala.² Interestingly in the case series of Fishbain et al.³ it was stressed that the pain patients showing aggressive behavior usually have psychiatric comorbidities and these comorbidities should be addressed during management of pain. The association between aggression and headache

has previously been described by several studies. For instance, Park and Seo reported that migraine patients had high aggression scores, the aggression was related to headache intensity and suicidality.⁴ A similar co-occurrence was also describes trigeminal autonomic cephalgias such as cluster headache.⁵ Batistuta et al. reported that adolescents with chronic tension type headache had higher aggression scores as compared to the controls.⁶

CASE PRESENTATION

A 36 year old man presented to neurology and

¹ Üsküdar University, NPIstanbul Brain Hospital, Neurology Department; ² Psychiatry Department, İstanbul, Turkey

³ Doğuş University, Electroneurophysiology Department, İstanbul, Turkey

⁴ Kemal Arikan Clinic of Psychiatry, İstanbul, Turkey

Correspondence address / Yazışma adresi:

Assoc. Prof. Dr. Barış METİN, Üsküdar University, NPIstanbul Brain Hospital, Saray Mah. Ahmet Tevfik İleri Cad. No.18
34768 Ümraniye/İstanbul, Turkey

E-mail: Baris.metin@uskudar.edu.tr

Received: August 21st, 2020, **Accepted:** September 23rd, 2020, **doi:** 10.5455/apd.127208

Anadolu Psikiyatri Derg 2021; 22(x):xxx-xxx

psychiatry clinics for recurrent attacks of assaultive intention toward others. The patient had these assaultive attacks for 5 years. The attacks had a stereotypical pattern in that they always started with unbearable headache. He experienced approximately one or two episodes every month. During the attacks he described an urge to physically attack and harm others in vicinity. The episode started with severe tension-type headache localized to the frontal region. The patient denied co-occurrence of photo and phonophobia or other autonomic symptoms. The severity of headache was describes as 10 on

visual analog scale. During one attack, he tried explicitly to strangle and kill a man sitting next to him in a cafe. The attempt was stopped by others present. The patient did not recollect any of the details of the event nor did he acknowledge any conflict with the person he attacked. The attacks usually lasted about a couple of hours and the patient did not have any residual aggressive behavior between them. However, he acknowledged that he had intrusive thoughts about killing someone between the attacks and these intrusions intensified during headache.

Table 1. The patient's neuropsychological evaluation of memory, language, attention and executive functions, visuospatial planning

Ability	Test	Interpretation
Memory	Verbal Memory Processes Scale WMS Visual Memory Subtest	Mild frontal type impairment Mild frontal and temporolimbic type impairment
Language	Boston Naming Test	Moderate impairment in the confrontation naming skills
Attention and executive functions	Stroop Test Verbal Fluency Test Digit Span Test WCST Trail Making test Luria Alternating Patterns Clock Drawing Test Similarity Test	Normal inhibition skills Minimal impairment in constant attention and naming Minimal impairment in working memory Impairment in mental flexibility Visual working memory impairment Motor planning, set shifting and persistence skills are impaired Minimal impairment in planning Normal reasoning ability
Visuospatial skills	Benton Judgement of Line Orientation Test	Mild impairment

The patient's past medical history was unremarkable. The physical examination revealed no localizing signs. An MRI scan of the brain was normal. An electroencephalography was performed and did not reveal any epileptogenic feature. A neuropsychiatric battery was applied (Table 1), which mainly revealed abnormalities related to the prefrontal functions. The patient's working memory, set shifting, sustained attention, mental flexibility were significantly impaired. In addition we observed frontal type verbal memory impairment. This latter impairment implied that primary encoding was intact, however the patient had difficulties in recalling recorded information. The intelligence quotient, as measured by Cattell 2A test⁷ was 77 reflecting borderline intelligence. To assess psychopathology we applied SCID-5 interview that can specifically diagnose DSM-5 axis I and II disorders. In SCID-5,

we observed that patient met the criteria for the following axis I disorders: Obsessive compulsive disorder (OCD) and post-traumatic stress disorder (PTSD). The patient did not meet any criteria for axis II disorders. His score on Dissociative Experiences Scale⁸ was 38 (cutoff for this test is 28), which shows presence of significant dissociative life experiences. Regarding OCD, the patient had recurrent intrusive thoughts for killing or harming someone. These thoughts sometimes involved his child and led to compulsive checking to see if the child is somehow harmed. The intrusions became more prominent during headache episodes. Although the obsessions did not result in physical assault in most cases, the patient also overtly attacked people around him in one case as described above. PTSD diagnosis was made mainly because of flashbacks related to a past traumatic experience.

DISCUSSION AND CONCLUSIONS

Despite above mentioned reports of association between headache and aggression, we did not encounter a case in literature reporting homicidality in headache. The patient did not have nausea, vomiting and photo/phonophobia and therefore a diagnosis of migraine was excluded. He also did not have any autonomic symptoms associated with headache. As such we concluded that he did not have a type of trigeminal autonomic cephalgias. Based on headache characteristics, absence of photo/phonophobia and trigeminal autonomic symptoms and normal neuroimaging, diagnosis of tension-type headache was made. The patient was prescribed paroxetine 20 mg for tension type headache. In addition, we added risperidone 2 mg to control aggressive behavior and obsessions. The patient benefited significantly from this treatment. He experienced only mild headaches after the initiation of medical treatment and none of these headaches were accompanied by intrusive aggression intentions.

Notably the patient also met the criteria for obsessive compulsive disorder and his score on dissociative experiences scale was also high. From a psychiatric point of view, we speculated the severity of headache intensified the dissociative tendency of the patient and caused the homicidal attack. Notable his obsessions in be-

tween the headache episodes were also related to homicide. Thus his OCD might have also facilitated the homicidal behavior. In addition to those he displayed a profile consistent executive function deficits in neuropsychological testing and had borderline intelligence. Executive deficits in dissociative disorders were previously describes.⁹ From a forensic psychology point, the tendency of individuals with executive deficits to homicide is well known has been clearly described in literature. For instance in schizophrenia patients, Stratton et al. demonstrated that homicidal individuals showed executive and memory deficits as compared to the nonhomicidal individuals.¹⁰ Finally the patient also had PTSD. Patient's aggression towards people can be related to ongoing sensitivity and alertness to traumatic events.

Our case shows that headache patients with comorbid psychiatric and executive problems may be more inclined for violence and homicide. On the other hand the validity of this, this single observation should be tested in a case-control study. The results of such studies could unravel the link between pain, cognitive abilities and violence. Until we have such results, we suggest that physicians should be aware of psychiatric comorbidities in headache patients and headache specialists should not hesitate to consult such individuals with a psychiatrist.

Authors' contributions: B.M.: neurological evaluation, literature review, writing the manuscript; S.Z.M.: psychiatric evaluation, writing the manuscript; Y.A.: neurological evaluation, EEG recording and evaluation; H.L.: neuropsychological evaluation, literature review, manuscript preparation; K.A.: psychiatric evaluation, writing the manuscript.

REFERENCES

1. Fishbain D. Evidence-based data on pain relief with antidepressants. *Ann Med* 2000; 32:305-316.
2. Gouveia FV, Hamani C, Fonoff ET, Brentani H, Alho E JL, de Moraes RMCB, et al. Amygdala and hypothalamus: historical overview with focus on aggression. *Neurosurgery* 2019; 85:11-30.
3. Fishbain DA, Bruns D, Disorbio JM, Lewis JE. Correlates of self-reported violent ideation against physicians in acute--and chronic-pain patients. *Pain Medicine* 2009; 10:573-585.
4. Park SP, Seo JG. Aggression and its association with suicidality in migraine patients: a case-control study. *J Headache Pain* 2018; 19(1):67.
5. Robbins MS. Response letter: new daily persistent headache: disease or syndrome? *Headache* 2013; 53:679-680.
6. Battistutta S, Aliverti R, Montico M, Zin R, Carrozzi M. Chronic tension-type headache in adolescents. Clinical and psychological characteristics analyzed through Self- and Parent-Report Questionnaires. *J Pediatr Psychol* 2008; 34:697-706.
7. Toğrol B RB. Cattell Zeka Testinin 2A ve 2B Formları ile Porteus Labirenti Zeka Testinin 1300 Türk çocuğuna uygulanması. *Psikoloji Çalışmaları Dergisi* 1974; 11:1-32.
8. Sar V, Kundakci T, Kiziltan E, Bakim B, Yargic LI, Tutkun H. The reliability and validity of the Turkish version of the Dissociative Experiences Scale (DES-II). 33rd National Congress of Psychiatry (1-4 October 1997, Antalya).
9. McKinnon MC, Boyd JE, Frewen PA, Lanius UF, Jetly R, Richardson JD, Lanius RA. A review of the relation between dissociation, memory, executive functioning and social cognition in military members and civilians with neuropsychiatric conditions. *Neuropsychologia* 2016; 90:210-234.
10. Stratton J, Cobia DJ, Reilly J, Brook M, Hanlon RE. Differences in neuropsychological functioning between homicidal and nonviolent schizophrenia samples. *J Forensic Sci* 2018; 63:1435-1443.