



Research Article

Head Bath: As a Specific Trigger For Migraine and Tension-Type Headaches

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Summary

Aim: Head bath has recently been described as a trigger in migraine patients for migraine headaches. In this study we aimed to investigate the characteristic of headaches triggered by head bath in migraine patients.

Material and methods: Patients with headaches developing after head bath were identified reviewing medical records of 990 migraine patients registered to our Headache Unit and characteristics of headache were comprehensively evaluated in these cases by inviting them to control visit.

Results: It was found that head bath-triggered migraine headaches occurred in 36 of 990 (3.6 %) migraine patients with or without aura. In addition, in 14 (1.4 %) migraine patients, it was found that head bath-triggered non-migraine headaches with bilateral localization that are non-throbbing, less severe and shorter than migraine headaches and not accompanied by autonomic symptoms and that spontaneously resolve in most cases and can be prevented by hair drying. The non-migraine headaches developing in these cases met diagnostic criteria for episodic tension-type headaches.

Conclusion: In patients with migraine, interictal sensitization present at interictal period (between migraine headaches) can predispose onset of migraine and tension-type headaches. In some cases, onset of migraine headaches on some occasions while tension-type headaches on other occasions by head bath suggests that similar mechanisms are involved in the triggering migraine and tension-type headaches.

Key words: Migraine, head bath, tension-type headache, trigger

Baş Banyosu: Migren ve Gerilim Tipi Baş Ağrısında Özel Bir Tetikleyici

Özet

Amaç: Baş banyosu son zamanlarda migren baş ağrılı hastalarda ağrının tetikleyicisi olarak tanımlanmıştır. Bu çalışmada migren hastalarında baş banyosu ile tetiklenen baş ağrısı özelliklerini araştırmayı amaçladık.

Materyal ve metod: Baş ağrısı ünitesine kayıtlı 990 migrenli hastanın tıbbi kayıtlarının incelenmesi ile baş banyosu sonrası baş ağrısı gelişen hastalar ve baş ağrısı özellikleri kontrol ziyaretine çağırılarak kapsamlı olarak değerlendirildi.

Sonuç: 990 migren hastasının 36'sında (% 3.6) baş banyosu ile tetiklenen auralı ya da aurasız migren baş ağrıları ortaya çıkmıştır. Buna ek olarak, 14(% 1.4) migren hastasında baş banyosu ile tetiklenen bilateral lokalizasyonu olan, migren baş ağrılarından daha kısa ve daha az şiddetli olan otonomik semptomların eşlik etmediği ve çoğu vakada kendiliğinden azalan migren dışı baş ağrılarının bulunduğu saptanmıştır. Bu baş ağrılarının banyo sonrası saç kurutma ile önlenildiği görülmüştür. Bu vakalarda gelişen migren dışı baş ağrıları, epizodik gerilim tipi baş ağrısı için tanı ölçütlerini karşılamıştır.

Sonuç: Migren hastalarında, interiktal dönemde görülen interiktal duyarlılaşma (migren baş ağrıları arasında), migren başlangıcına ve gerilim tipi baş ağrısına yatkınlık oluşturabilir. Baş banyosu ile bazı vakalarda migren baş ağrısı, bazı vakalarda gerilim baş ağrılarının başlaması bu ağrılarda benzer mekanizmalar olduğunu düşündürmüştür.

Anahtar Kelimeler: Migren, baş banyosu, gerilim tip baş ağrısı, t

INTRODUCTION

It was first reported by Ravishankar K. from India that head bath is a trigger that can induce migraine headaches (1). To our knowledge, no other study supporting this issue has been published from any other region in the world. It has been reported that reason for this could be genetic and/or different environmental factors (1). This study was devised to investigate whether head bath is a reason that triggers migraine headache and to determine whether non-migraine headaches with varying characteristics develop in relation with head bath in our patients with migraine.

MATERIAL AND METHODS

The study includes 990 migraine patients with or without aura who were managed in Headaches Unit in Neurology Department of Firat University, Faculty of Medicine within prior 5 years; who had available medical records; and met the criteria of International Headache Society The International Classification of Headache Disorders, 2nd edition (ICHD)-III beta (2). Medical records of all patients were reviewed. Fifty cases were identified in which headache develops following head bath. The patients identified were invited to our clinic by accessing address information from their files. A further medical history was obtained by questioning patients regarding headache characteristics. In all patients, physical and neurological examinations were normal, while routine blood tests, urinalysis and imaging studies including cranial computerized tomography scan or magnetic resonance imaging were found to be within normal limits. These patients had

neither systemic nor neurological disorders other than migraine that could cause headaches. The cases had no history of experiencing discomfort from any odor or perfume. There was no history of smoking, alcohol consumption or drug addiction. The study was approved by Local Ethics Committee. All patients gave written informed consent before participation.

RESULTS

Of the 50 cases included, 43 were women and 7 were men with a mean age of 35 years (min: 16-max: 70). 41 of the cases had migraine without aura and 9 had migraine with aura.

Migraine headaches, which had characteristics similar to commonly developing migraine headaches of the patient and met ICHD-III beta criteria, were developing after head bath, within 2 hours, in 36 of the cases included. Table 1 presents clinical characteristics of this group.

In 14 of the cases included, there were headaches which had differential characteristics than commonly developing migraine headaches of the patients. These were bilateral, less severe and shorter than migraine headaches and non-throbbing without accompanying autonomic symptoms, in which coldness, chilling, or burning sensation on scalp precedes and spontaneous resolution occurs in most cases. These headaches had similar features with tension-type headaches and met diagnostic criteria of such headaches (2).

Table 2 presents clinical characteristics of this group.

Table 1: Cases in which head bath-triggered migraine headaches**Gender**

Male: 6

Female: 30

Type of Migraine

Migraine with aura: 5

Migraine without aura: 31

Age

Mean:35 years

Min:16- Max 60

Timespan of migraine

2-20 years

Triggers

Head bath alone in 6 cases

Head bath with one or more triggers in 30 cases

Preventive measure and result

No headaches if dries his/her hair in 9 cases

No headaches in case of bathing with warm water and hair drying in 5 cases

Hair drying does not prevent headache in 3 cases

No preventive measure in 19 cases

Table 2: Cases with head bath-related tension-type headache

Nr	Age	Gender (r yukarda)	Characteristics of migraine headaches	Migraine Triggers	Non-migraine headaches following head bath	Preventive measures for non-migraine headaches
1	35	F	20-years migraine with aura	Bath Stress	For 15 years, mild to moderate, non-throbbing headaches lasting 6-7 hours, which onset within one hour after bath and experienced bilaterally at vertex and neck. No nausea, vomiting, photophobia or phonophobia. No analgesic use.	Hair drying prevents headache
2	48	F	5-years migraine with aura	Stress	For 3-4 years, mild to moderate non-throbbing headache lasting 2-3 hours with preceding burning sensation, and coldness or chilling on scalp in some instances, which onset during or within 15-30 minutes after almost every bath, involves whole head. No nausea, vomiting, photophobia or phonophobia. Resolves with resting. No analgesic use.	No preventive measures
3	38	F	7-years migraine with aura	Stress Menstruation Cold weather Sunlight	For 10 years, non-throbbing headache lasting 1-2 hours, which onset within 30 minutes after almost every hot bath. No nausea, vomiting, photophobia or phonophobia. Resolves with resting.	No headache occurs when bathed with warm water
4	29	F	4-years migraine with aura	Stress	For 12 years, non-throbbing headaches with bilateral involvement of anterior regions of head, which onset within one hour after bath. No nausea, vomiting, photophobia or phonophobia. Resolves with 1-2 hours resting.	Hair drying prevents headache
5	36	F	8-years migraine without aura	Sleeplessness Odor	For 6-7 years, mild to moderate, non-throbbing headache lasting 1-2 hours, which	Hair drying prevents headache

				Stress Hunger	onset within one hour after every bath and involves whole head. No nausea, vomiting, photophobia or phonophobia. Resolves with resting. No analgesic use.	
6	32	F	10-years migraine without aura	Stress	For 12-13 years, moderate headache lasting 2-3 hours with preceding chilling at vertex, which onset 15 minutes after bath and involves whole head. No nausea, vomiting, photophobia or phonophobia.	No preventive measures
7	21	F	1.5-2-years migraine without aura	Sunlight Odor	For 3 years, mild, non-throbbing headaches lasting 1-2 hours, which onset within one hour after some baths and involves whole head. No nausea, vomiting, photophobia or phonophobia. Resolves spontaneously.	No preventive measures
8	25	F	5-years migraine without aura	Sleeplessness Hunger Menstruation	For 2 years, mild, non-throbbing headaches, with preceding chilling at vertex, lasting 3-4 hours, which onset within 1-2 hours after some baths or swimming. No nausea, vomiting, photophobia or phonophobia.	No preventive measures
9	70	F	50-years migraine without aura	Stress Odor Hunger	For 25 years, mild-moderate non-throbbing headaches involve whole head, which onset 2-4 hours after some bath lasting 2-3 hours. No nausea, vomiting, photophobia or phonophobia. Resolves with resting or sometimes required analgesics.	No preventive measures
10	36	F	15-years migraine without aura	Menstruation Stress	For 15 years, mild-moderate headache involving occipital region accompanied by a sensation of fullness, which onset 2-3 hours after bath lasting 2-3 hours. Resolves spontaneously.	No preventive measures
11	35	M	15-years migraine without aura	Stress Hunger	For 10-15 years, mild-moderate headache involving whole head accompanied by a sensation of fullness, which onset 1-2 hours after bath lasting 2-3 hours. Resolves spontaneously.	Drying head after bath doesn't prevent headache
12	40	F	20-years migraine with aura	Stress	For 15 years often mild sometimes moderate non-throbbing headache involves whole head, onset 30-60 minutes after every bath, lasting 2-3 hours. No nausea, phonophobia, photophobia	No preventive measures
13	49	F	15-years migraine without aura	Menstruation	For 2-3 years, mild bilateral pressing dull headache, onset 1-2 hours after bath and lasting 4-5 hours, resolves spontaneously	No preventive measures
14	21	F	1-year migraine without aura	Sleeplessness Menstruation	For 2 years mild, non pulsating dull headache involves whole head, onset within 2 hours after bathing and lasting 2 hours and resolves spontaneously	No preventive measures.

DISCUSSION

In our study, we found that there were head bath-triggered migraine headaches in 36 of 990 migraine cases. In this regard, our results are consistent with those reported by Ravishankar K (1) In our country, bathing habituation is spilling hot water to whole body over head by using a bowl. Also, showering with hot water is one of the methods used for bathing. However it is less common to bath with cold or warm

water. In the study by Ravishankar K., it was reported that warm or cold water are generally used for bathing in India (1). Bathing habituations are similar in both countries, but temperature of the water used is different. This suggests that temperature of water used is not the main factor in triggering migraine headache. Regardless of being hot or cold, sudden contact of water with a temperature different than skin temperature and decrease in skin temperature during

evaporation of water over skin stimulate temperature-sensitive receptors at skin. It has been concluded that migraine is an episodic dysfunction of brainstem or diencephalic sensory modulation systems, as suggested by the finding of activations in the brain stem in PET scans during the acute attack (3,4). Likewise, it was recently shown that cutaneous thermal (hot and cold) pain thresholds and thermal pain tolerance thresholds were lower during interictal period (between migraine attacks) in patients with episodic and chronic migraine when compared normal individuals (5). That study suggests that episodic and chronic migraine subjects are more sensitive to thermal stimulation during the interictal period, suggesting interictal sensitization (5). Interictal sensitization may predispose patients with migraine to development of headaches. Authors proposed that the stimuli that cause no problem for a normal individual may trigger an attack in those predisposed to migraine (5).

In our 14 cases, non-migraine headaches developed after head bath which met diagnostic criteria for episodic tension-type headaches. It is likely that above-mentioned mechanisms may play a role in the onset of such headaches. As known, pericranial myofascial pain sensitivity is increased in patients with tension-type headaches. Peripheral sensitization of myofascial nociceptors could play a role in the increased pain sensitivity (6). In some cases, onset of migraine headaches on some occasions while tension-type headaches on other occasions by head bath suggests that similar mechanisms are involved in the triggering migraine and tension-type headaches. Previously, this type of headaches; head bath triggered tension-type headache, has not been reported. However, clinical characteristics of the cases, reported as type 2 bath-related headache (Type 2 BRH) in the literature, seem rather similar to our cases (7). Thus, we consider that it is appropriate to stratify type 2 BRH in the same category with our

cases. Previous considerations on type 2 BRH by Mak W et al. are consistent with our opinion (8).

Stress, insomnia, skipping a meal and fatigue are the most common precipitating factors for migraine and tension-type headaches (9,10). In our cases, head bath has drawn attention as a factor triggering tension-type headaches. This triggering factor hasn't been reported so far.

The fact that head bath-triggered migraine and tension-type headaches have not been reported in countries other than India and Turkey can be associated with genetic factors and variations in environmental factors, primarily in bathing habituations, among countries and societies.

It should be kept in mind that tension-type headaches could also be triggered as well as migraine headaches by head bath; thus, these patients should also be questioned about such headaches. Since onset of headache could be prevented by drying hairs after bath, medical therapy should be considered in cases of unresponsiveness to preventive measures.

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