

# 'Hair wash' or 'head bath' triggering migraine – observations in 94 Indian patients

K Ravishankar

*The Headache and Migraine Clinic, Jaslok Hospital, Lilavati Hospital, Mumbai, India*

## Cephalalgia

Ravishankar K. 'Hair wash' or 'head bath' triggering migraine – observations in 94 Indian patients. *Cephalalgia* 2006; 26:1330–1334. London. ISSN 0333-1024

Identification of trigger factors is helpful in the diagnosis and management of migraine. Common triggers of migraine are well established but 'hair wash or head bath' as a trigger for migraine has so far not been reported. This prospective study analysed this unusual trigger link in 94 out of 1500 Indian patients who fulfilled the International Headache Society criteria for migraine. In 11 patients, hair wash was the only trigger; in 45 patients hair wash was one of the triggers and in 38 patients hair wash was a trigger concurrently and in combination with another common trigger. The effect of episodic and long-term prophylaxis in preventing this trigger-like headache has been analysed. The underlying pathophysiological basis is not established but it is important for this unusual regional trigger to be identified and incorporated in the management strategy. □ *Bath-related headache, hair-wash headache, Indian patients, migraine triggers*

*K. Ravishankar, The Headache and Migraine Clinic, Jaslok Hospital, Lilavati Hospital, Mumbai, India. E-mail dr\_k\_ravishankar@vsnl.com Received 20 April 2006, accepted 12 July 2006*

## Introduction

Migraine is a recurrent primary headache disorder characterized by varying clinical presentations and accompaniments. Underlying trigger factors of migraine vary between individuals and even between attacks in any given patient. Different migraine triggers have been well documented (1–3), but 'hair wash' or 'head bath' as a trigger has so far not been reported. This study was undertaken to document hair wash or head bath as an unusual trigger for migraine in some Indian patients and to highlight the beneficial effect of antimigraine prophylaxis on this trigger link (4).

It is important to mention the bathing habits and possibly relevant differences in Indian patients. Many Indian women have long hair that is oiled and well plaited (Fig. 1) and since it is time consuming to dry long hair after a head bath, women in India do not always wet their hair whenever they have their daily bath. It is also common practice not to use a hairdryer but to dry the hair as shown in

(Fig. 2). As a result, the hair stays wet for long periods.

It is only when there is an important occasion or when they have more time on hand to dry the hair that women have a hair wash and this could be on 2–3 days of the week or even less. With temperatures being high in most parts of the country for most months of the year, bathing in hot water is less common. It is usually lukewarm or cold water that is used.

On the days when they have a hair wash, some migraineurs complain of a gradual build-up of a throbbing headache within the following 10–15 min to 1 h, with accompaniments that fulfill the International Headache Society criteria for migraine (5). They have only one type of headache, and when they have a typical migraine headache following a hair wash or head bath we allude to this as 'hair-wash headache' and have concluded that washing of the hair is the triggering factor either in isolation or sometimes concurrently with other triggers.



Figure 1 Long, plaited hair.



Figure 2 Method of drying the hair.

## Case reports

### Case 1

A 35-year-old teacher presented with a history of recurrent headaches over the previous 8–10 years. The head pain was throbbing in nature and

involved the right hemicranium. The pain was precipitated by hair wash or head bath, with exposure to sunlight, on skipping meals and with improper sleep. The headache following hair wash was so intense that she was forced to reduce the frequency of washing her hair to only once a week, either on her day off work or on a special festive occasion. If she had to wash her hair on weekdays, she would do so only after returning from work and would also take a painkiller and sleep so that there would be no headache the next day. She always had only one type of head pain. The headache following head bath would commence within 10–15 min and had the same migrainous features as that precipitated by other triggers.

She wrongly attributed this headache to a sinus problem. All her headaches, including that induced by hair wash, had associated nausea, vomiting, photophobia and phonophobia. She preferred to switch off the lights and sleep in a dark room and movement aggravated this pain. She also had similar headaches just prior to her periods. Clinical neurological examination and imaging studies were normal. She was started on chronic antimigraine prophylactic therapy and there was a marked reduction in the frequency of hair-wash-related headaches and she could have her head bath more frequently than before without developing headache.

### Case 2

A 37-year-old woman presented with a history of recurrent severe headaches occurring two to three times a week for the past 4 years. She complained of pain in the left temporal and left parietal region with radiation to the neck. It was an unbearable, throbbing pain that lasted for 24–48 h. There was associated vomiting, phonophobia and shivering of the whole body. Her attacks were triggered mainly by head bath. However, when she used a hairdryer following the head bath, she was able to prevent the headache on most occasions. She tried having a head bath with only cold water, only warm water, only hot water, and even tried changing her shampoo, but these efforts did not succeed. Because of this unbearable headache, she had her head bath only once a fortnight and thereby was able to control the frequency of her migraine attacks. Her neurological examination was normal and the computed tomography (CT) scan revealed no abnormality. The patient was treated with episodic prophylaxis and was advised to take naproxen

sodium or ergotamine tablets an hour before having a hair wash or head bath and this helped abort the attacks.

### Case 3

A 19-year-old college girl presented with headaches occurring on a twice-weekly basis, always precipitated by hair wash. Due to this headache, she had reduced her frequency of head baths from every day to only twice a week. She even ineffectively tried to wash only her hair without getting her body wet to see if this prevented her headaches. She realized that the headaches did not occur when she dried her hair with a hairdryer. However, if after washing she dried her hair at home or left the hair open or tied the hair without drying, she would always develop a headache within 10–15 min after getting out of the bath. This pain lasted the whole day and usually involved the occipital area without nausea or vomiting. No pain-killers would give relief and she dreaded having a head bath or hair wash because of the severe headache that ensued. There was a positive family history of migraine headaches and her mother also had the same kind of headache related to hair wash. Her neurological examination and CT scan were normal. Antimigraine prophylactic treatment was successful in reducing hair-wash-induced migraine attacks and she was able to have a head bath more frequently.

### Methods

One thousand five hundred consecutive patients who attended our headache clinic and who fulfilled the ICHD-2 criteria for migraine with and without aura (5) were included in this study. Ninety-four were found to have hair wash or head bath as a trigger for their migraine attacks.

These 94 patients completed a questionnaire (Table 1), based on which they were categorized into three groups depending on whether the hair wash or head bath was the sole trigger factor or existed concurrently with others.

Group I included individuals with hair wash or head bath as the only trigger factor for all their attacks. Group II included those patients where hair wash or head bath was a trigger for some attacks but where there were other triggering factors also. Group III included those patients where hair wash or head bath was a trigger but only concurrently in combination with other factors such as exposure to sunlight or fan breeze.

**Table 1** Hair-wash or head-bath headache questionnaire

- 
- 1 Does 'hair wash' or 'head bath' provoke your headache?  
 Always  Sometimes
  - 2 Is 'hair wash' or 'head bath' the only trigger factor for all of your attacks?  
 Yes  No
  - 3 Do you have other triggers for your headaches? Please specify.
  - 4 Does hair wash trigger your attack in isolation or concurrently in combination with other triggers? Please specify.
  - 5 How many types of headache do you have?  
 One type  More than one type
  - 6 Does the headache following hair wash depend on the temperature of the water? Is there any difference depending on whether you have a bath with hot or cold water?
  - 7 Do you use shampoo or soap to wash the hair? Have you tried avoiding shampoo or soap to abort the headache?
  - 8 Does only a body bath without wetting the hair give you a headache?  
 Yes  No
  - 9 Do you get a headache when you wash your hair without getting your body wet?  
 Yes  No
  - 10 Do you dry your hair after a hair wash? Does drying help reduce the headache?  
 Yes  No
  - 11 What efforts do you take to prevent your hair-wash-related headache?
- 

The effect of episodic and long-term antimigraine prophylactic treatment on this trigger link was also evaluated. The line of treatment was decided based on the frequency of headache attacks related to hair wash. Patients with episodic migraine attacks clearly linked to this trigger and with fewer than five attacks per month were treated with naproxen sodium or ergotamine taken an hour prior to the hair wash. Others with more frequent migraine attacks and where other triggers were present were managed on long-term treatment with routine prophylactics such as propranolol, divalproex, topiramate or flunarizine and they were followed up on a once-monthly basis. A positive response to treatment was indicated by a decrease in the frequency of migraine attacks following hair wash. There was no attempt to compare the different prophylactic drugs.

**Table 2** Analysis of 94 patients with 'hair wash or head bath' headache

	Group I (n = 11)	Group II (n = 45)	Group III (n = 38)
Group profile	HW/HB the only trigger for all attacks	HW/HB the trigger for some attacks + presence of other triggers	HW/HB a trigger but only in combination with other triggers
Occurrence of HA with HW/HB	Always	Always in 31, sometimes in 14	Always but only in the presence of other triggers
MoA : MA	10 : 1	45 : 0	35 : 3
F : M	11 : 0	44 : 1	36 : 2
Treatment	11, episodic prophylaxis	18, episodic prophylaxis 27, chronic prophylaxis	12, episodic prophylaxis 26, chronic prophylaxis
Improvement with treatment	9/11, with episodic	15/18, with episodic 18/27, with chronic	10/12, with episodic 18/26, with chronic

HW, Hair wash; HB, hair bath; MoA, migraine without aura; MA, migraine with aura.

## Results

### Demographics

Out of 1500 patients, 1410 (94%) were found to have migraine without aura and 90 (6%) had migraine with aura. Ninety-four patients had hair wash or head bath as a trigger for their migraine attacks and, of these, 90 had migraine without aura and only four migraine with aura.

There was a predominance of female patients ( $n = 91$ ). The mean age of patients was 40 years (range 14–64 years).

### Analysis of hair wash as a trigger (Table 2)

In Group I, there were 11 patients with hair wash or head bath as the only trigger and they had always suffered from a migraine attack whenever they had a hair wash or head bath. They did not have migraine attacks spontaneously or with other trigger links.

In Group II, there were 45 patients with hair wash as the trigger for some of their attacks and there were other trigger factors such as fasting, exposure to sunlight, lack of sleep responsible for attacks at other time points.

In Group III, there were 38 patients where hair wash or head bath induced an attack but only in combination and concurrently with other trigger factors such as going out in the sun, sitting under fan breeze or in front of an air conditioner, or application of henna following hair wash. Hair wash alone did not trigger the attack in this group.

In Group I, all 11 patients were treated with episodic prophylaxis. Nine patients showed a good

response to this treatment and there was no headache following head bath.

In Group II, 18 of 45 patients were treated with episodic prophylaxis, of whom 15 improved; 27 patients were on long-term prophylactic therapy, of whom 18 improved.

In Group III, 10 patients out of 12 showed improvement with episodic prophylaxis and 18 patients out of 26 responded well with long-term prophylaxis. None of these patients had what could be labelled bath-related headache (BRH) (10).

## Discussion

Some regions of the world have unusual triggers for migraine (6–8). This study highlights an unusual trigger seen in Indian patients. Hair wash or head bath triggering migraine headaches has so far not been reported in the West.

It should be stressed that hair-wash headache (HWH) (9) and BRH (10) do not refer to the same type of headache. BRHs have been analysed in detail by Mak et al. (10). Type 1 BRH is usually seen in female patients >45 years old and presents acutely to the emergency department (ED) with severe explosive thunderclap headache warranting exclusion of subarachnoid haemorrhage: the headaches are short-lasting (<4 h), almost always precipitated by hot water, there is no past history of headache, there is no photophobia or phonophobia and, most importantly, the link between the hot bath and headache remits spontaneously (11–13). In contrast, type 2 BRH patients had a past history of migraine or tension-type headache, they did not present to the ED with severe headache, none of them needed imaging studies to rule out other

secondary headaches, they were more easily preventable and remitted after many years. Type 1 BRH has so far been reported mainly from the Far East (10) and type 2 BRH only from Turkey (14).

As an extension to this unusual link between bathing and primary headaches, we wish to report hair wash as an unusual trigger of migraine in Indian patients. Following a hair wash or head bath, our patients suffered the same type of migraine headache that they had had earlier or in association with other triggers. This unusual trigger link is well recognized by patients to the point of their reducing the frequency of a hair wash or postponing it to the evening hours after work, when they have more time. They uniformly comment 'On most days I have a body bath and only on my free days do I have a body and head bath!'

Using a head-bath questionnaire, we attempted to analyse the variables related to this unusual trigger to determine whether there could be other aspects, such as length of the hair, temperature of the water, smell of the shampoo or soap, that may be responsible for triggering the headache. Not all patients who developed migraine following hair wash had long hair; 14 out of 91 females and all three males had short hair. Details were also analysed to exclude other trigger factors before concluding that the hair wash or wet hair was the trigger.

The pathophysiological basis for this remarkable regional variation still defies explanation and has not been convincingly discussed in any articles on the subject. The underlying basis for migraine attacks induced by some other well-established triggers is also not known. One can only conjecture at this stage whether this unusual trigger link is due to a genetic or racial variation or whether it is the wet hair that triggers through temperature-sensitive receptors.

It is of interest to note that 'hot-water epilepsy' or 'bathing epilepsy' is another geographically specific reflex epileptic syndrome more commonly seen in India (15, 16). This again has been rarely reported from European countries. Since migraine and epilepsy are known to be comorbid, one might draw an analogy based on this. Stensman and Ursing (17), in trying to explain the pathophysiological basis, have suggested the combination of factors such as contact of scalp with hot water, temperature of the water and triggering of specific cortical areas. Whether there is an aberrant thermoregulatory system that is genetically determined needs to be investigated. Again, it needs to be pointed out that

unlike hot-water epilepsy, HWH can be induced with cold water and does not necessarily involve 'hyperthermia', as in the thunderclap BRHs that have been reported from the Far East.

Based on the presentation seen in our Indian patients, we wish to highlight hair wash or head bath as an unusual trigger link for migraine. The underlying scientific basis is not yet known. As trigger control plays an important role in migraine management, there is a need to be aware of unusual triggers peculiar to different regions.

## References

- 1 Scharff L, Turk DC, Marcus DA. Triggers of headache episodes and coping responses of headache diagnostic groups. *Headache* 1995; 35:397-403.
- 2 Olesen J, Tfelt-Hansen P, Welch KMA. *The headaches*. New York: Raven Press 1993.
- 3 Blau JN. Migraine triggers: practice and theory. *Pathol Biol (Paris)* 1992; 40:367-72.
- 4 Ravishankar K. 'Hair-wash headache' - an unusual trigger for migraine in India - observations from 94 patients. XII. Congress of the International Headache Society/IHC 2005. Poster Presentation. *Cephalalgia* 2005; 25:191-8.
- 5 ICHD-2. The International Classification of Headache Disorders, 2nd edition. *Cephalalgia* 2004;24:1-160.
- 6 Cooke LJ, Rose MS, Becker WJ. Chinook winds and migraine headache. *Neurology* 2005; 54:302-7.
- 7 Lipton RB. Fair winds and foul headaches. Risk factors and triggers of migraine. *Neurology* 2000; 54:280.
- 8 Ravishankar K. Unusual migraine trigger factors. *Headache World* 2000. Poster Presentation. *Cephalalgia* 2000; 20:359.
- 9 Ravishankar K. 'Hair-wash headache' - an unusual trigger for migraine in Indian patients. *Cephalalgia* 2005; 25:1184-5 (Letter) .
- 10 Mak W, Tsang KL, Tsoi TH, Yeung KM, Cheng TS, Cheung TFR, Ho SL. Bath-related headache. *Cephalalgia* 2005; 25:191-8.
- 11 Tsang KL, Tsoi TH, Cheung RTF. Two cases of shower-induced headache. *Neuroscience Lett* 1998; 50 (Suppl.):S7.
- 12 Negoro K, Morimatsu M, Ikuta N, Nogaki H. Benign hot bath-related headache. *Headache* 2000; 40:173-5.
- 13 Liao YC, Fuh JL, Lirng JF, Lu SR, Wu ZA, Wang SJ. Bathing headache: a variant of idiopathic thunderclap headache. *Cephalalgia* 2003; 23:854-9.
- 14 Mungen B, Bulut S. Hot bath-related headache: four cases with headaches occurring after taking a hot bath. *Cephalalgia* 2003; 23:846-9.
- 15 Satishchandra P. Hot water epilepsy. *Epilepsia* 2003; 44:29-32.
- 16 Satishchandra P, Shivaramakrishna A, Kaliaperumal VG, Schoenberg BS. Hot water epilepsy: a variant of reflex epilepsy in southern India. *Epilepsia* 1988; 29:52-6.
- 17 Stensman R, Ursing B. Epilepsy precipitated by hot water immersion. *Neurology* 1971; 21:559-62.