

Exercise-Induced Headache - A Case Report

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Abstract

Headache is one the commonest presentation in primary care settings and it presents a challenge to the treating physician. As the complaint becomes chronic, it affects quality of life of the patient. Individuals and patients experiencing headaches take medications undergo meditations and non-invasive investigations and yet no complete cure is attained. Various factors have been identified as to the cause of headache, and classification of headache has been identified in medical literature. Case reports in literature have discussed sports-related headache, and avoidance has been the short term preventive management offered. Keeping in view the diversity of the common complains of headache, we came across an interesting case and which has been reported. A 43 years old male Gulf Co-operation Council (GCC) Member, experiencing intermittent frontal headache after gym exercises with no constitutional symptoms. He was an average built healthy adult, non-smoker and no associated comorbidity. Counselling and warm up before gym exercises was advised.

Keywords: Exercise, headache, sports, diagnosis, disease management.

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Introduction

Headache is one of the most common presentations in outpatient clinics and primary care settings, thereby; it poses a challenge for the treating physician. In real life, almost every person would have experienced headache once in a lifetime and knows well what it means to have constant or continuous headache now and then. Individuals and patients experiencing headaches undergo medications, meditations and non-invasive investigations and yet no complete cure is attained. The chronic continuous nature of the complaint, compromising quality of life, keeps dragging them from doctor to doctor and clinic to clinic. The patient is

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willing to undergo any investigation and treatment to get rid of headaches completely.

The recent incidence of cancers and tumours has alarmed patients and individuals to seek medical care at appropriate period, not to be sorry later. This has led to investigations of the new era, such as computed tomography (CT) scan and magnetic resonance imaging (MRI) to exclude any pathology related to brain and nervous system. The complexity involved in diagnosing the problem calls for attention, however, there are various classifications and diagnostic criteria in medical science. Medical literature and evidence-based medicine has been discussing headache quite extensively over the decades. Evidence-based medicine has evolved the classification of headache with multiple clinical types, and management has been targeted towards each form and class. The important point to be noted not all headaches are triggered by space-occupying lesions as most patients think. Nonethe-

less, approximately 10% of headaches have an organic origin, for which careful history and physical examination is essential, with added support from investigations.

The entity, sports- or exercise-induced headache has not been an unusual finding, however, despite their frequent occurrence, there is little epidemiological data on the subject. Sports- and exercise-related headaches have been reported as a series of individual cases, and distinct forms have been described on the basis of their characteristics and precipitating factors or events. Since the 1980s, primary exertional headache or exercise-related headaches have been under discussion. A study done in the 1990s found that 30% of university students have suffered from an episode of exercise headache¹. The same population was studied for different types of sports- or exercise-related headache that revealed 60% of students suffered from effort-exertion headache, which was found to be the most common type of sports-related headache². One of the published review articles has described various entities for sports-related headaches: benign exertional headache, effort headache, acute post-traumatic headache and cervicogenic headache³.

In the early 2000s, studies discussing sports- and exercise-induced migraine and headache in weight lifters came into limelight⁴. Approximately one-third (38%) of migraine patients attending a Dutch headache clinic stated having exercise-triggered migraine attacks. Interestingly, neck pain has been reported to be the initial symptom of migraine attack in patients with exercise-triggered headaches⁵. Keeping in view the exertional headache, we came across a case wherein the patient experienced headache after gym exercises. It has been observed that aerobic exercises are considered to be health-seeking behaviour in all settings, and almost a universal advice to all young adult patients seeking for lifestyle modifications. This case sought attention as headache, which is quite commonly encountered in the outpatient clinics, in association

with exercise was an interesting phenomenon to be presented.

Case Report

A 43 year old male, citizen of the Gulf Cooperation Council (GCC) country, presented to a private medical centre in the United Arab Emirates with the complaint of intermittent frontal headaches for 6 months. The hospital does not have an ethical review board, therefore, written informed consent was taken from the patient regarding using data for research purposes, and his identity is kept anonymous. There was no history of trauma, or any medical or surgical procedures that the patient underwent. He was a healthy adult with an average built, non-smoker, with no known co-morbidities and not taking any regular medicines or vitamin supplements. His work was mostly office desk-based (managerial position), so basically a sedentary lifestyle. He experienced these headaches when he went to the gym for regular exercise to keep his body in shape. The headaches were not associated with any other constitutional symptoms like blackout, dizziness, blurred vision; it was a generalised frontal headache that initiated soon after exercise. Headache started after 20 to 30 minutes of exercise described as discomfort in the frontal region accompanied at times with nausea. He did not experience any episode if he did not attend gym for exercises.

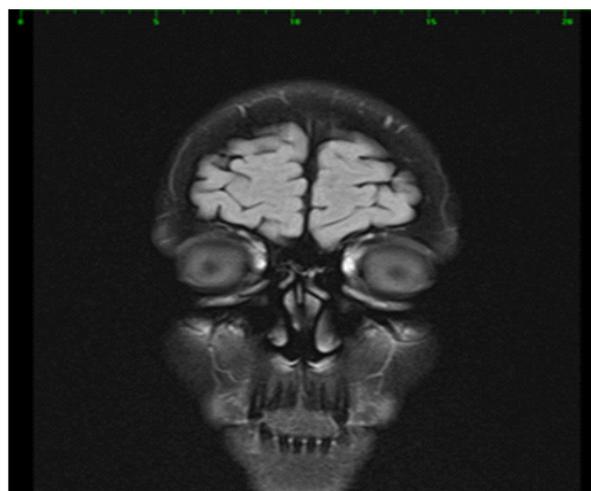


Fig. 1. MRI brain showing discrete white matter hyperintensities in the frontal lobe

On examination he was conscious, well-oriented and vitally stable. Systemic examination was normal, with no neurological or muscular deficit. Nervous system and ear, nose and throat (ENT) examination was also normal. Routine lab works did not reveal any significant abnormality. An MRI brain was requested to rule out any pathology, which showed non-significant, discrete white matter hyperintensities in the frontal lobe (Fig. 1). Hence, a diagnosis of exercise-induced headache was made and the patient was counselled regarding warm up before exercise, sleep hygiene, minimising environmental risk, good nutrition and hydration before gym. A non-significant MRI was seen but the patient was referred to a neurologist for a second opinion, who advised to avoid strenuous exercise in order to reduce headache episodes, and to do warm up before initiating exercises. In the follow-up, the patient reported feeling much better with decreased episodes of headache following exercise, although he had not noticed much improvement in intensity of headache post-exercise.

Discussion

Exercise-related headache seems to be a common finding affecting the modern day athlete. Active patients might suffer not only from the common headache; rather their problem could be compounded by exercise-induced headache. The non-specific nature of sports- and exercise-induced headache escalates a unique thought provoking for the encountering clinician. Sports- or exercise-induced headaches are difficult to distinguish from other headache syndromes. This case emphasises on history and examination as the key to diagnosing headache, as not all headaches are of organic origin, though this fact cannot be ignored. Therefore, the role of investigations to exclude pathology is imperative, until proven otherwise. Few cases have been registered in medical literature for sports- and exercise-related headaches. A similar case was presented in 1990 of an elderly female with headache induced after swimming. All related investigations were non-significant, and as per advice she stopped swimming and headache was relieved⁶. Re-

cent online survey on a large population of Netherlands showed 26% cyclists having experienced exercise-related headache according to the International Headache Society Criteria. Over one-third (37%) of these cyclists have used medicines for exertional headache⁷.

The paediatric population has also been observed suffering headaches after exertion. Study on three normal children experiencing headache on exertion has been published. These children were advised head cooling (immersion of head in cold water, pouring cold water over head or application of cold packs/towels on head). This has been exercised for quite some time and found to be beneficial. Head cooling has been suggested to be one of the remedies for exercise-induced headaches⁸.

Most patients have adopted avoidance of sports or exercise to prevent occurrence of headache episodes. The emphasis here is 'prevention is better than cure' and avoidance of trigger factor is the best proven beneficial therapy. However, treatment of headache is similar to any other type of pain, and analgesics are the first line to offer for combating headache. Nonetheless, long-term use of analgesics might lead to unwanted side effects or tolerance of certain dosing forcing the use of higher doses or other chemicals. Following stepladder pattern for pain, narcotics or opioid analgesics might also be prescribed, which in turn are addictive. A systematic review on headaches revealed athletes with tension headache can be treated with non-steroidal anti-inflammatory drugs, whereas, athletes with migraine can be best managed with triptans and prophylaxis can be done with antidepressants or calcium channel blockers⁹.

The pathophysiological mechanism of various categories of headache is still controversial. Multiple theories and hypothetical models exist to explain the complex sequence of biochemical, pharmacological and neurovascular events leading to distinct type of headaches. Few of the recommendations tend to be proper warm up before exercise, sleep hygiene, minimising environmental risk, good nutrition and hydration; however, pharmacological therapies might be deemed necessary¹⁰.

Primary exertional headaches appear to be quite common and merit further investigations and research to provide a framework for their overall management. This will enable the treating physician to understand the existing and emerging triggers for headache related to sports and exercise. This will help to minimise, limit and control misuse and over-use of medicines and investigations for primary exertional headaches.

Conclusion

Exercise-induced headache is an entity, which can occur in individuals after gym, sports or other forms of physical exercises. Counselling and warm up gym exercises, sleep hygiene, hydration and good nutrition are essentials to avoid sequelae of exercise-induced headache.

Conflict of Interest

Authors have no conflict of interests and no grant/funding from any organisation for this study. Permission was taken from the patient for publication of this case report.

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