

Medically Unexplained Symptoms Attributable to Electromagnetic Hypersensitivity: Raising Awareness of the Implications

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ABSTRACT

Background: Electromagnetic hypersensitivity was observed in the context of mobile phone use. It was reported to be the reason for psychological and physical problems. There is a need to document electromagnetic hypersensitivity and its effects.

Materials and methods: A clinical interview was conducted with the case.

Results: The case reported the presence of pain in the facial region attributable to using mobile phone.

Conclusion: There is a need for sensitization programs to raise public awareness of the effects of electromagnetic hypersensitivity.

Keywords: Electromagnetic, Hypersensitivity, Mobile phone, Pain.

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INTRODUCTION

A decade ago mobile phones were a novelty item owned by a few selected individuals, but have now become an indispensable part of everyday life. As of December 2017, India has 1.02 billion active mobile users with a teledensity of 91.90, which is second only to China.¹ Mobile phone accounts for 88% of all telecommunication use.² With increasing numbers of mobile phone subscribers in the country, India is expected to become the leading country in terms of mobile phone subscribers in the near future. With the increased use of mobile phones, there has been an increasing frequency in the reported development of symptoms such as headache, sleep disturbance, memory loss, dizziness, and burning sensations during or after mobile phones.^{3,4} Users attributed these symptoms most frequently to an exposure to mobile phone base stations (74%), followed by mobile phone (36%), and cordless phones (29%).⁵ There has been increasing concern regarding the health effects of excessive use of mobile phones, as well as the emission of electromagnetic radiation from mobile phone. In response to public and government concerns, the World Health Organization (WHO) established the International Electromagnetic Fields Project in 1996 to assess the scientific evidence of possible adverse health effects from electromagnetic fields.⁶ According to the WHO, IEI-EMF (Idiopathic Environmental Intolerance attributed to Electromagnetic Fields) is characterized by physical symptoms such as tingling and burning sensations in the face, fatigue, and tiredness.⁷ There is a worldwide debate over the existence of EHS and the effects of Electromagnetic radiation on the human body. This prompted the WHO to form "The International EMF Project" to assess the health and environmental effects of exposure to static and time-varying electric and magnetic fields in the frequency range 0-300 GHz.⁸

Electromagnetic Hypersensitivity (EHS) refers to a cluster of non-specific somatic and psychological symptoms purportedly caused by exposure to electromagnetic fields (EMFs).⁹

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In population-based surveys, the prevalence of EHS has ranged from 1.5% in Sweden to 13.3% in Taiwan.¹⁰

According to a WHO report, a large number of studies have been performed over the last two decades to assess the potential health risks of mobile phone use, but they have not been able to establish any adverse health effects caused by mobile phone use.¹¹

The majority of studies indicate that EHS individuals cannot detect EMF exposure any more accurately than non-EHS individuals. Well-controlled and conducted double-blind studies have shown that symptoms were not correlated with EMF exposure.¹² A review, looking at 29 single or double-blind studies that exposed people to real and sham EMR, reports that most of the studies did not show any significant association between EMR and consistent symptoms in the self-reported EHS participant.⁹

According to the WHO guidelines treatment of affected individuals should focus on the health symptoms and the clinical

picture, and not on the person's perceived need for reducing or eliminating EMF in the workplace or home. After ruling out an organic cause of the problem, a psychological evaluation needs to be done to identify alternative psychiatric/psychological conditions that may be responsible for the symptoms.¹³

The present report describes a case with electromagnetic hypersensitivity. He sought consultation at SHUT clinic (Service for Healthy Use of Technology), Bengaluru, India. It is India's first clinic to manage technology addiction and related issues.

CASE DESCRIPTION

Mr. B, a 32-year-old unmarried male, hailing from a rural background in central India, from a middle socioeconomic status, presented with pain in the facial region after using a mobile phone. The patient initially reported pain in the right ear after using a newly bought mobile phone for half an hour. He reported that his right cheek started swelling due to the prolonged use of the cellphone, the observation of which was validated by his friends and family. He initially thought the symptoms were due to a cold he developed, but later he noticed that the pain would start whenever he used the phone for more than 30 minutes. He described the pain to be a dull, aching pain of 20–40% intensity originating from the ear and radiating to the neck. The pain would gradually fade away 2–3 hours after stopping the use of the phone. His friends and family also tried the mobile phone, and did not share his concerns, nor could they find any temporal correlation of phone use with pain in the ear. He replaced the phone with a different model, but the problem persisted, so he sold it at a loss to a friend. He didn't ask if his friend had the same problems since he was afraid he would demand his money back. The patient explained his problem by stating that the weather was cloudy on the first day he used the phone and that his phone was not fully charged. Because the network range was poor, he claimed this caused the phone to generate strong radiations, damaging his ear and sensitizing it to even weaker radiations. He said that this was the sole reason he was having problems, not his family or friends.

This pain led to socio-occupational impairments, he could not focus on his work and studied for the exams he was supposed to write. He also started avoiding situations where people would sit in a group because he feared excessive radiation exposure from mobile phones. He also complained of a burning sensation on the back of his head with an approximately 3 cm radius, with the sensation of paresthesia in the center. This pain was of 20–50% intensity and accompanied by nausea. It was relieved by tying a cloth around his head for 2–3 hours.

The patient underwent a battery of tests under the advice of a local practitioner, although his CT scan reports showed no abnormality. He also sought the advice of a homoeopathic practitioner, but to no avail, and was eventually evaluated by an ENT expert, who diagnosed him with hearing loss and urged him to limit his use of his phone.

He was not satisfied with received treatment, so he decided to get neurology/psychiatry consultation at NIMHANS, Bengaluru. He has been prescribed Escitalopam 5 mg. He was then referred to SHUT clinic (Service for Healthy Use of Technology).

In therapy sessions, the patient underwent a clinical intake which revealed that he wanted relief from headaches and to reduce his anxiety related to phone use. He asserted that most doctors did not trust him because there was a lack of research on the subject. Activity scheduling and defocusing of the symptoms was planned.

He was also advised relaxation techniques of breathing exercises and walking in the morning and evening. He was psycho-educated regarding available evidence in the area of his health concern and EMF radiation. On follow-up, he showed improvement in occupational functioning, but he continued to complain of the 4G spectrum as the reason for the pain.

DISCUSSION AND CONCLUSION

The present case documents the presence of a health concern attributable to electromagnetic hypersensitivity. A similar presentation has been observed in another reported case, characterized by pain after continuous use of a mobile phone. The symptoms manifested as itching and numbness across the left ear and neck. He started experiencing psychosocial impairment due to these symptoms.¹⁴ The cases demonstrate that information technology can be an attributable factor in psychological problems/dysfunctions. It also confirms the Leventhal approach of illness behaviors, demonstrating the influence of cognitive representations of illness behavior and their relationship with coping behaviors.^{15,16}

The present case is one of the very few reported cases of IEI-EMF in India, it is of interest because there is an increasing report of EHS worldwide, this has also paved the way for many companies to exploit the customers. There are special mobile phone cases that are proclaimed to decrease the radiation emitted by mobile phones. However, this may in fact increase anxiety related to mobile phone use, due to the legitimization and propagation of fear of adverse effects, despite a lack of evidence.¹ There is also an increasing trend among people to buy homes in places free from electromagnetic radiation. There is a need to raise awareness among the public in this area of health concerns due to electromagnetic radiation.

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