Medication Overuse Headache in a Patient with Myasthenia Gravis: a Case Report on Successful Intervention by an Acupuncturist

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Abstract

In this case of medication overuse headache in a patient with myasthenia gravis, an acupuncturist identified the use of an over-the-counter analgesic that was not revealed to the attending physician. This case highlights the potential role of an acupuncturist as part of the medical care team involved in headache management.

Medication Overuse Headache in a Patient with Myasthenia Gravis: a Case Report on Successful Intervention by an Acupuncturist

Short title: Acupuncture for MOH management

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Abstract

In this case of medication overuse headache in a patient with myasthenia gravis, an acupuncturist identified the use of an over-the-counter analgesic that was not revealed to the attending physician. This case highlights the potential role of an acupuncturist as part of the medical care team involved in headache management.

Keywords

acupuncture; medication overuse headache; myasthenia gravis

1. INTRODUCTION

Headache is one of the most common diseases in the field of acupuncture. Acupuncture is more effective in reducing the number of headache days in episodic migraine and tension-type headache as compared to pharmacotherapy and sham acupuncture.[1,2] The Clinical Practice Guideline for Chronic Headache 2013 recommended acupuncture as the preferred physical therapy among non-pharmacological therapies for managing primary headaches (Grade B).[3] Our experience with acupuncture for managing headaches based on this guideline has been successful.[4] In addition, acupuncture is reportedly more effective for managing secondary headaches, such as medication overuse headache (MOH).[5] Thus, acupuncture has been shown to be effective for headaches and according to the current clinical practice guidelines, acupuncturists are members of the medical care team. However, their role remains unclear.

We report the intervention of an acupuncturist for MOH in a patient with myasthenia gravis (MG), with successful management of the headache and discontinuation of the inappropriate use of an over-the-counter (OTC) analgesic. We highlight the role of acupuncturists in medical care teams for managing headaches.

2. CASE REPORT

History of presenting condition

A 47-year-old woman presented with a history of headache and neck pain for the past 35 years. She had not consulted a specialist for the treatment of headache and had been taking OTC analgesics almost daily. Her headache, which was described as bilateral, non-pulsatile, and dull, persisted despite using OTC analgesics. In July 2016, the patient developed diplopia, with diurnal fluctuation and limb fatigue. On reviewing at the Department of Neurology, the patient was diagnosed with generalized MG (class IIa) based on positive results for anti-acetylcholine receptor antibodies and without thymoma. In September, prednisolone and immunosuppressants were administered. She sought consultation for her headache during the visit. The attending physician considered MOH and thus, prescribed muscle relaxants instead of analgesics to manage the headache. However, the patient continued using OTC medication despite understanding the analgesic

restriction and failed to disclose to the attending physician about using OTC medications. In November, she was hospitalized owing to worsening of MG. The fatigue symptoms disappeared with immunoadsorption plasmapheresis, and intravenous immunoglobulin (IVIg) administration (400 mg/kg × 5 days). She had severe headaches while receiving IVIg. During the second admission in September 2017, the severe headaches recurred on the 3rd day of IVIg therapy. Based on The International Classification of Headache Disorders, 3rd edition, aseptic (non-infectious) meningitis was excluded as a cause of the headache. During hospitalization, she was referred to our department for management of tension-type headache.

Description of patient

At the first visit to our department, she had a pulsatile global headache associated with nausea and vomiting. This headache was different from her usual headaches. We confirmed her history of long-term analgesic use for her usual headaches. MG symptoms included diplopia and limb muscle weakness with diurnal variation (Osserman classification: II B). Physical examination revealed remarkable tenderness and increased muscle tone of the cervical shoulder muscle group and neck pain induced by neck movement. Deep tendon reflexes and tactile sensation were intact. A manual muscle test showed weakness of the upper and lower limbs.

The medications being used were prednisolone 10 mg/day, cyclosporine 150 mg/day, ambenonium chloride 5 mg/day, alendronic acid 35 mg/weekly, and tizanidine 3 mg/day. Loxoprofen 60 mg was used as a single dose.

Acupuncture treatment

Acupuncture treatment was carried out by a licensed acupuncturist with 5 years of clinical experience. The frequency of acupuncture for treatment was once a week from the first visit to the 4th visit, twice a month from the 5th to 8thvisit, and once a month after the 9th visit. Acupuncture was performed using stainless steel disposable acupuncture needles (length: 40 mm, diameter: 0.16 mm, Seirin Co., Ltd.). Acupoints were selected based on our previous studies.[4] The purpose of acupuncture was to relieve pain and tone in the neck muscle and to normalize the central sensitization. The acupoints used were GB20 on the plate muscle; BL10 and GB21 on the trapezius muscle; SI14 on the levator scapula muscle; BL43 on the rhomboid muscle; and GB5, BL2, ST6, and ST7 in the trigeminal nerve area. After insertion, the needle was left in place for 10 min. Press-tuck needle (diameter: 0.9 mm, Seirin Co., Ltd.) was applied to the trapezius, plate and elevator scapulae muscles, which had remarkable muscle tone. A headache diary was used to evaluate the frequency and duration of the headache and the number of times loxoprofen was taken.

Outcomes and follow-up

Historical and current information from this episode of care organized as a timeline was shown in Figure 1. The headache diary was used to evaluate the frequency and duration of headache and the number of taking loxoprofen. Acupuncture treatment for about a year reduced the days with headache and consumption of loxoprofen (Figure 2). Initial days with headache and number of taking loxoprofen were 18 and 7 days. Both decreased gradually, and one year later, the days with headache were reduced to 7 days, and number of taking loxoprofen was reduced to 3 days, respectively. Furthermore, the acupuncturist heard about the patient's use of OTC analgesic, and explained about MOH during medical interviews and treatments. The acupuncturist advised her to follow her attending physician's instructions regarding medication, and she succeeded in stopping the use of OTC analgesics.

3. DISCUSSION

The headache in this case had multiple causes associated with the treatment of MG, such as IVIg. However, during the medical interview, long-term use of analgesics was revealed, and evaluation by an acupuncturist based on the ICHD-3 criteria suggested MOH. Though the headache diary was not able to assess the number of days of headache at baseline, she had headaches for 15 days or more before acupuncture. Therefore, we suspected MOH and advised acupuncture, which not only improved the headache, but also reduced loxoprofen use.

The acupuncturist was able to elicit OTC analgesics use. This may be due to a good rapport established between the patient and the acupuncturist because of the relatively prolonged contact with the patient during the medical interview, physical examination, and treatment. Patients with MOH should refrain from taking analgesics as much as possible.[6] Intervention by an acupuncturist in the treatment of MOH in this case was successful with explanations for headache relief and medication compliance. This case suggests that acupuncturists who have knowledge of the ICHD-3, which includes MOH, may play a role as part of the medical management teams rather than solely providing acupuncture to relieve pain.

In conclusion, the improvement of headache in a patient with MOH suggests that intervention by acupuncturists may be a non-pharmacological treatment option for MOH. The participation of acupuncturists with knowledge of ICHD-3 in medical teams may contribute to headache relief and proper substance use.

Patient perspective

Before acupuncture treatment, the patient did not understand MOH correctly. Her contact with an acupuncturist with knowledge of ICHD-3 facilitated her understanding of the pathology of MOH. In addition, acupuncture reduced headaches and succeeded in reducing the use of OTC analgesics. She claims that her lengthy conversations and treatments with the acupuncturist were helpful in correctly recognizing her own headaches (June 2021).

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AUTHOR CONTRIBUTIONS

Yuto Matsuura: contributed to conceptualization and wrote the original draft of the manuscript

Shoko Izaki: contributed to interpretation of data and assisted in the preparation of the manuscript; critically reviewed & edited the manuscript

Tomokazu Kikuchi: contributed to conceptualization and wrote the original draft of the manuscript; critically reviewed & edited the manuscript

Satoru Yamaguchi: contributed to interpretation of data and assisted in the preparation of the manuscript; critically reviewed & edited the manuscript

All authors approved the final version of the manuscript, and agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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FIGURE LEGENDS

Figure 1. Timeline of historical and current information from this episode of care. Abbreviations: IVIg, intravenous immunoglobulin; MC, myasthenia gravis; OTC, over-the-counter

Figure 2. Changes in the number of days with headache and intake of loxoprofen.