

Chronic Daily Headache in a Patient With Nasopharyngeal Carcinoma

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Chronic daily headache (CDH) among nasopharyngeal carcinoma (NPC) patients is a multidisciplinary challenge. Although imaging studies are recommended to identify skull-base invasion, intracranial metastasis or skull-base osteoradionecrosis, a headache diary is also a practical approach. A 42-year-old woman had been bothered with CDH since she was diagnosed with T3N1M0 stage III NPC 2 years earlier. Although the imaging studies did not show any abnormality, the attending doctor informed her that there remained the possibility of an intracranial or skull-base lesion. She was regularly taking painkillers. Eventually, when her headache diary was examined, the diagnosis of chronic migraine superimposed on medication overuse headache was made according to the ICHD-II. The CDH abated after 1 week of outpatient detoxification. The following half year was uneventful. In reporting this case, we suggest that it would be of interest to a number of disciplines including otorhinolaryngologists, oncologists and radio-oncologists. By avoiding medication overuse in similar patients, we hope to improve the quality of life of these individuals. [*J Chin Med Assoc* 2010; 73(12):660–664]

Key Words: chronic daily headache, medication overuse headache, nasopharyngeal carcinoma

Introduction

Chronic daily headache (CDH) comprises a group of headache disorders where the headache occurs at a frequency greater than 15 days per month and lasts more than 4 hours a day over a 3-month period. CDH includes chronic migraine, chronic tension-type headache, new daily persistent headache, hemicrania continua and medication overuse headache (MOH) (Table 1).^{1–4} The prevalence of CDH is about 4–5% in the general Taiwan population.⁵ The presence of CDH in a patient with nasopharyngeal carcinoma (NPC)^{6,7} is usually attributed to skull-base invasion, intracranial metastasis or skull-base osteoradionecrosis. Such a possible diagnosis may panic sufferers and/or make them depressed. CDH in patients with NPC is a multidisciplinary challenge, and for this reason, we report the present case.

Case Report

The patient was a right-handed 42-year-old female with B blood type and a height of 148 cm, a weight of 46 kg, and a body mass index of 21.0 kg/m². She was not addicted to tobacco, alcohol, betel nut or any medication. She was not suffering from hypertension, diabetes mellitus, heart disease, migraine or other systemic disease. Two years previously, a mass measuring about 4 × 4 cm had been noted in her left neck at level II over 2 weeks. This was proven histologically to be an undifferentiated NPC (Figure 1A). After a series of studies, a T3N1M0 stage III (American Joint Committee on Cancer, 6th edition) NPC was confirmed. From that time onwards, the patient was bothered by daily headaches.

In the next 3 months after the diagnosis of NPC, she received combined chemoradiotherapy. Despite



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Table 1. Classification of chronic migraine and medication overuse headache (ICHD-IIR)

Chronic migraine ³	Medication overuse headache* ⁴
<p>A. Headache (tension-type and/or migraine) on at least 15 days/mo for at least 3 mo</p> <p>B. Occurring in a patient who has had at least 5 attacks fulfilling criteria for migraine without aura</p> <p>C. On at least 8 d/mo for at least 3 mo, headache has fulfilled C1 and/or C2 below, that is, has met criteria for pain and associated symptoms of migraine without aura</p> <p>C1. Has at least 2 of the below factors: unilateral location, pulsating quality, moderate or severe pain intensity, aggravated by or caused by routine physical activity (e.g. walking or climbing stairs), nausea and/or vomiting, photophobia and phonophobia</p> <p>C2. Treated and relieved by triptan(s) or ergot before the expected development of C1 above</p> <p>D. No medication overuse and not attributed to another causative disorder</p>	<p>A. Headache present on at least 15 d/mo</p> <p>B. Regular overuse for over 3 mo of at least 1 acute/symptomatic treatment drug, as defined under either subform below</p> <p>(1) Ergotamine, triptans, opioids, or combination analgesic medications on 10 d/mo on a regular basis for over 3 mo</p> <p>(2) Simple analgesics or any combination of ergotamine, triptans, analgesic opioids on 15 d/mo on a regular basis for over 3 mo without overuse of any single class alone</p> <p>C. Headache has developed or markedly worsened during medication overuse</p>

*Diagnosis of medication overuse headache can be given before 2-month withdrawal period has elapsed, e.g. diagnosis should be made in patients with primary headache and concurrent medication overuse.



Figure 1. (A) Two years before the current admission, computed tomography showed the presence of a nasopharyngeal carcinoma located on the left side of the nasopharynx (arrow). (B) Combined chemoradiotherapy cured the patient of nasopharyngeal carcinoma, and a recent computed tomography study showed her nasopharynx to be smooth and the patient well.

the fact that the NPC remitted, the headaches continued to occur every day. Over the following year, the patient regularly received otorhinolaryngological local treatments and swallowing rehabilitation for radiation mucositis. She was taking 4 tablets of acetaminophen 500 mg and 4 tablets of ibuprofen 400 mg daily. The intensity of the headaches decreased, but the headaches did not stop.

A more recent nasopharyngeal examination, computed tomography (Figure 1B) and Tc-99m whole body bone scan did not show any abnormality, but the attending physician informed her that there was the possibility of intracranial or skull-base invasion. As a result, she felt panic and became depressed. In April 2008, she consulted the first author (J.J. Chen) for a second opinion.

Physical examination showed that the patient's blood pressure was 121/70 mmHg, heart rate was 65 beats/min, body temperature was 36.5°C, and respiratory rate was 17 breaths/min. Deep tendon reflexes in all 4 limbs were symmetrically normal. Her pinprick sensation was intact. Her muscle strength was graded 5/5 on the Medical Research Council scale. The responses to bitter, salty and sweet stimulation in terms of taste sensations were all intact. The finger-to-nose tracing test and the heel-knee-shin test were both normal. The patient could not recall the antecedent characteristics of the headaches. As a result of the above, she was invited to fill in a headache diary over the following month.

The 1-month headache diary (Table 2) revealed that the patient had a low-grade holocephalic headache that

Table 2. Patient's 1-month headache diary

Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
The degree of headache (1 = mild; 2 = moderate; 3 = severe)																																		
Morning	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Afternoon	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Evening	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Sleep time	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Accompanying symptom (please mark "✓")																																		
Nausea	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Vomiting	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Photophobia	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Phonophobia	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Throbbing pain	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Unilateral*	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Activity intolerance																																		
Paresthesia†	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Aura (please mark "✓")																																		
Flashing light																																		
Visual field defect																																		
Attack duration (hr)	24	24	24	24	24	24	10	9	9	9	7	6	9	7	7	4	4.5	6	4	6	4.5	3	5	7	6	5	5	4	3.5	7	6			
Analgesics and dose																																		
Daily 4 tablets of acetaminophen 500 mg and 4 tablets of ibuprofen 400 mg																																		
The effect of analgesics (0 = none; 1 = some effect; 2 = good effect; 3 = very good effect)																																		
0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Period of menses (please mark "✓")																																		
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

*Left side; †left upper limb.

was associated with phonophobia and photophobia. The symptomatic duration averaged 9.1 ± 6.8 hours. During menstruation, the headache influenced her life and work because it became throbbing. In this circumstance, the headache usually involved the left orbito-temporal area, lasted all day, and was associated with nausea, vomiting and left upper limb paresthesia. According to the International Classification of Headache Disorders, 2nd edition, with further modifications in 2006 (ICHD-IIR),²⁻⁴ the diagnosis of chronic migraine superimposed on MOH was made.

Therefore, we persuaded the patient to undergo an outpatient detoxification course. Two tablets of dihydroergotamine mesylate 5 mg and 3 tablets of prochlorperazine 5 mg were recommended to be taken every 12 hours daily. Switching back and forth between belief and suspicion, she ceased taking the painkillers that she had become habituated to. Over the following week, the headache abated and the daily symptomatic duration decreased to half an hour. Henceforth, she became free from painkillers. Over the next 6 months, the headaches became more and more unimportant and eventually were not noticed, even though she was not receiving any prophylactic treatment.

Discussion

It is now recommended that a diagnosis of MOH should no longer need to show improvement after discontinuation of medication overuse but should be given to patients if they have a primary headache plus ongoing medication overuse.⁴ In this case, the patient could not recall the antecedent characteristics of CDH, and we therefore did not know what sort of headache induced her CDH before medication overuse. Eventually, when her headache diary was examined, the diagnosis of chronic migraine superimposed on MOH was made according to the ICHD-IIR (Table 1).²⁻⁴

The prevalence of MOH is about 1% in the Taiwan general population.⁸ In total, about 48% (895/1,861) of all CDHs are MOHs. The medications overused include both simple analgesics (46%) and compound analgesics (54%). Medication overuse may contribute to the development or the prolongation of chronic post-traumatic headache because MOH prevails in 18.8–45.8% of those with chronic post-traumatic headache.^{9,10} Even among chronic cluster headache patients, the prevalence of MOH is approximately 4%.¹¹ Thus, any patient with CDH might have a case of medication overuse.

Outpatient or inpatient detoxification should be recommended for MOH. At present, intravenous

dihydroergotamine is not available in Taiwan. Therefore, repetitive intravenous prochlorperazine is the first-line treatment for refractory CDH with or without medication overuse. If necessary, diphenhydramine may also be given orally before sleeping as a prophylaxis for extrapyramidal symptoms.¹² Our patient's headache diary could be interpreted as chronic migraine, and therefore dihydroergotamine mesylate was recommended during detoxification in addition to oral prochlorperazine. Over the following week, she tolerated the detoxification well, and there were no rebound headaches, so hospitalization was unnecessary.

It is possible that medication overuse precedes and is a risk factor for CDH. Alternatively, people with frequent headaches may take medication in response to the pain.¹³ Medication overuse can also possibly be an exacerbating factor. In this context, analgesic overuse is considered neither necessary nor sufficient to induce CDH.¹³ Thus, it remains controversial as to whether analgesic overuse is a cause or a consequence of CDH.¹³ Although skull-base invasion or intracranial metastasis was thought to contribute to our patient's CDH during her initial examination for these headaches, these were ruled out by the imaging studies. In these circumstances, the risk factors for CDH should have been modified by appropriate strategies at the beginning of treatment, and these should have included a limited use of acute medications for no more than 10 days a month.¹³

Taking the above as a whole, we did not know what sort of headache the patient was suffering from before medication overuse. Her headaches were only gradually relieved when the medication overuse was eliminated, so we cannot entirely ascribe the MOH remission to detoxification. With the help of the patient's headache diary, the diagnosis of chronic migraine superimposed on MOH was made according to the ICHD-IIR. This case has important implications for otorhinolaryngologists, oncologists and radio-oncologists in terms of diagnosis and treatment. We hope that by noting this case as an example, the quality of life of such patients can be improved and medication overuse avoided.

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