How to Approach Difficult Patients with Chronic Headache?

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Case Management:

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ABSTRACT

One year ago, a 17-year-old female came to visit neurologist because she wanted to recover from chronic headache which she had been having. Her neurologist diagnosed chronic migraine. Even with adjustment on both medicine and dosage, the patient's condition was not getting better. Her headache was so terrible that she had to drop out from school. Although the neurologist tried to find the root cause of the headache by means of MRI and MRA brain scans, her neurologist did not find anything abnormal. After doing some observations and looking for other factors related to the headache, the neurologist went to consult the case with a psychiatrist and found that the patient was having psychiatric problems, which could be matched with major depressive disorder and somatic symptom disorder. In addition, the patient's family had been having a lot of conflicts, causing pressure upon the patient herself. The key strategies in continuously treating a patient are communication skills, in providing information, building a therapeutic relationship, and awareness of the patient's mental state that was affecting her headaches. The goal of the collaboration between neurologist and the psychiatrist is the efforts into making the improvement of overall functions and quantity of her life. The patient's outcome was better, both headache and depressive disorder. Nowadays, she starts planning to go back to school.

Keywords: Chronic headache, migraine, major depressive disorder, somatic symptom disorder

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INTRODUCTION

Primary headaches are very common in general population. Migraine, one of the primary headaches, occurs in about 12% of the U.S. population.[1] When patients complain about a stable pattern of episodic headache, the likelihood of migraine is greater than 90%. Treatment of migraine headache is challenging because of the difficulty in predicting individual response to a specific agent or dose. There is evidence that patients with migraine have a spectrum of episodic headaches across time. Episodic migraine can transform to chronic daily headache. What is vital here is to identify the factors related, especially psychological issues. Below is an example of case management and guideline for managing chronic headache and psychiatric comorbidity. This case shows the effective collaboration between neurologist and child and adolescent psychiatrist.

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Case

A 17-year-old female developed intermittent, holocephalic and pressing-type headache for one year. The headache was associated with nausea and vomiting and got worse in the morning and was occasionally severe for 3-4 hours. The pain could be relieved by sleeping and taking some medication, especially acetaminophen. There was no association between headaches and positional change (sign of intracranial hypo/hypertension). Her mother had a history of migraine headache. At first, the neurologist started naproxen and amitriptyline, but her headache was not improved. After that, the process of switching medication began, but she got more suffering from her chronic headache so she dropped out from school. Her clinical characteristics were changed: frequency, intensity, and duration. Her neurologist investigated for other medical conditions by brain imaging, MRI and MRA brain, and the result was negative. The next step, consultation with another specialist was required.

How to approach headache[2]

First of all, standard questions must be asked of each patient to guide an appropriate diagnostic evaluation and physical examination of patients to correct diagnosis and to confirm that secondary causes can be ruled out.

The following steps show physical examinations of outpatients with headaches.

o Routine check: vital signs, Body Mass Index (obesity can cause headache)

o Head and neck

♣ Palpitation of Temporomadi-bular Joint (TMJ): TMJ arthritis or bruxism can mimic with migraine

♣ Paranasal sinuses tenderness and postural related

♣ Occipital nerve trapped and complication with neuralgia

o Focus neurological examination

o Optic fundi examination: disc swelling for increased intracranial pressure sign

o Motor system and gait disturbance

o Meningeal irritation signs

Professor of neurology from Mayo Clinic, David Dodick, first offered the mnemonic S-N-O-O-P4 as a guideline for identifying a secondary headache.[3]

SNOOP4

S-systemic symptoms and signs: Especially concerning in HIV or cancer patients

N-neurological symptoms and signs (including focal neurological deficit or altered mental status)

O-onset: abrupt onset, split seconds, or thunderclap headache referred to increased intracranial pressure or vascular pathology

O-older age: onset of primary headache usually less than 50 years old

P-pattern change:

Progressive in severity or frequency
Precipitated by valsalva manoeuvres
Postural aggression
Papilledema

In this case, the physical examination showed no sign of secondary headache. The patient was diagnosed migraine headache without aura, which is the common diagnosis for primary headache in daily practice. The International Classification of Headache Disorders, 3rd edition (ICHD-3) provides validated international criteria for diagnosing headaches, including migraine headache. (Box 1)[4]

Box 1 **ICHD-3 beta Diagnostic criteria 2013**

A. at least 5 attacks fulfilling criteria B-D
B. headache attack episodes 4-72 hours (in children 2 hours)
C. at least 2 of the following 4 characteristics
   Unilateral location
   Pulsating quality
   Worsened by routine physical activity
   Moderate or severe pain intensity
D. during headache at least one of the following
   Nausea and/or vomiting
   Photophobia and phonophobia
E. not better accounted for by another ICHD diagnosis

Tension-type headache has something in common with migraine but some criteria are reversed. Compared with migraines, tension-type headaches are more variable in duration, more constant in quality, and less severe. In this patient, she had chronic and progressive headache. For the best practice, doctors should take history of the *original headache presentation* due to the high rates of transformation of headache characteristics.

Although some chronic headache patients may present with both migraine and tension-type liked symptoms, we recommend doctors to identify what type the primary headache was exactly. Brief validated screening by the **mnemonic *P-I-N*** can help us to make a diagnosis migraine in origin. PIN, which are three-item questions, allow patients to answer presence or absence of the symptoms below.

P-photophobia

I-impairment especially physical impairment

N-nausea

If patient has two or more P-I-N characteristics, the positive predictive value for migraine diagnosis is 93%. In this case, she had all P-I-N characteristics, and her PPV was 98%, so then we made diagnosis migraine headache without aura.[5]

Management of acute migraine headache

In acute phase, treatment is focused on trigger avoidance, acute symptomatic control, and pharmacological prevention. Guideline suggests doctors to use minimal effective dose of simple analgesics, NSAIDs, Triptans[6], or Ergotamines and slow titrate medication to maximum tolerated dose. Combination therapy can be used in case that monotherapy fails.

Ergots derivatives, which are migraine-specific drugs that bind to serotonergic receptors, are suitable for infrequent headache patients without early-onset nausea and good compliance. Warning these should not be used in combination with Triptans.

Principles for preventive treatment

1. Set goal of treatment

2. Start slow and go slow until therapeutic effects (minimal effective dose) are achieved

3. Continue treatment at **least 2 months** and if it is effective doctors can taper off medication after 6-9 months

4. If the first medication is ineffective, try another one and taper off the old ones

5. Use combination therapy when monotherapy has failed

6. Pharmacological preventions are propranolol, anticonvulsant, and antidepressant such as trazodone

Evidence in children and adolescents treatment for migraine headache

Strong evidence supports medications for acute treatment are ibuprofen and sumatriptan nasal spray (in Siriraj Hospital we replace from nasal spray to oral form). Good evidence supports medication for preventive treatment is flunarizine.

Chronic headache

Chronic headache or chronic daily headache is defined as a headache presented at least 15 days per month for at least 3 months for at least 4 hours per day. Patients with preexisting episodic migraines have gradually transformed similarly to tension-type headaches. The term, *transformed migraine*, is still being widely used for patients with preexisting episodic migraines that have transformed to either primary or secondary chronic daily headaches. The important view of addressing the *transformed migraine* is to identify factors, both modifiable and unmodifiable factors which are contributing to migraine progression.

Types of risk factors

1. Modifiable risk factors:
   obesity, medication overuse, caffeine overuse, and stressful life events
2. Unmodifiable risk factors:
   age, specific genes

Treatment for chronic migraine headache

1. *Education and set up the goal*

Most of the treatments in chronic stage may not always cure the pain completely, but they help the patient to relieve pain, at least 50% of total severity and frequency within 3 months, and also improve the disabilities.

2. *Life style modifications*

For example, exercise, diet control, and good sleep hygiene will help the patient get through the pain.

3. *Address psychosocial issues*

4. *Discontinuation of medication overuse* and initiation of "bridge therapy"

5. *Initiation of preventive medication*

The most common medicines used to treat chronic headaches are called prophylactic medicines, which are taken on a daily basis, even when a person may not have a headache

6. *Bio-behavioral therapy*

There are some positive evidence on biofeedback and cognitive behavioral therapy

7. *Close follow up for 8-12 weeks*

What did the doctor do with this intractable headache patient?

After using naproxen and titration of amitriptyline to 20 mg/day, the patient suffered from amitriptyline side effect which was drowsiness, but her headache was not significantly improved. Therefore, her neurologist switched medication to topiramate.

6 months later, there was little improvement, so her neurologist requested for brain MRI and MRV. The imaging result was normal: no mass and no Chairi malformation (basilar hernia-tion sign). At that time, the patient had more somatic symptoms that could not be explained by clinical characteristics of chronic headache and medication overuse. Her neurologist chose a combination of naproxen and sumatriptan and consulted child and adolescent psychiatry for management of psychological issues. The recommendation for intractable headache management is in box 2.

Box 2 Management of intractable headache[7]

Proper medication and/or dosage

Consider medication overuse

Revise diagnosis especially secondary headache

Looking for untreated psychological comorbidities

Part of psychiatric management

1. History taking

Present illness

4 years PTA, patient had conflicts with her family, especially with her sister. Her mother wanted her to do many tasks for her little sister. Her mother would usually ask her to help her little sister with many things. The patient helped as mother asked to do, even though she did not want to do it.

2 years PTA, patient could pass the entrance test into a new school. During the period of the first examination, she had a fever with headache, and could not go to school to do the exam. She had to follow up about homework from her classmates. She felt that she was a burden, and started to have a more severe headache, usually in the morning, until it was so severe that she could not go to school. In the second semester, her mother noticed that whenever the patient had a headache, she would keep herself in her room, spend time playing on her cellphone, and looked weak. If she had a very sever headache, she would sleep all day, then complain that she could not sleep at night, and then wake up late in the morning. Also, she would cry a lot in the restroom and would have poor memories.

Her mother saw that the patient should be more responsible for her daily routines, should spend more time on her study, and should spend less time on her cellphone.

Personal history

She was a cheerful person and liked to join activities. She had a lot of friends. She always did well academically.

Developmental history

She was preterm newborn due to preeclampsia and had to stay in an incubator for 3 weeks. She was quite unhealthy during childhood, and suffered from allergy.

2. Mental status examination

On the first date in the psychiatric unit, there were signs of depression and anxiety. Her concentration was poor. She denied about death

wish and suicidal ideas. When the psychiatrist asked about her three wishes in life, she only wished for her recovery from headache.

3. Psychiatric diagnosis

The diagnosis by Diagnostic and Statistical Manual of Mental Disorder, 5th edition (DSM-5)[8] was Major depressive disorder with two comorbidities: Dysthymia and Somatic symptom disorder. She also had sibling relational problems and educational problems that worsened the prognosis.

Somatic symptom disorder categorised in Somatic symptoms and related disorders group, which consists of four other main disorders: Illness anxiety disorder, Conversion disorder, Factitious disorder, and Psychological factors affecting other medical conditions. Considering the conditions of the patient, her illness had to have a differential diagnosis, *Psychological factors affecting other medical conditions.* Both have somatic complaint and functional impairment. However, the difference was that for Somatic symptom disorder, the patient would have excessive thought or feeling about that somatic symptoms, while for Psychological factors affecting other medical conditions, patients have medical conditions with psychological or behavioral factors which affect their medical condition by influencing the course of medical illnesses, interfering with treatments or precipitating symptoms. In some cases, it is very difficult to differentiate between the two, but there are similar principles in treating these two groups of patients.

4. Approach patients with Somatic symptoms and related disorder

1. Exploring medical causes and reassure that there is no evidence of life-threatening condition

2. Establishing trust: avoid early confrontation and directly challenge patients

3. Set goal: coping with symptoms and restoration of functions

4. Minimizing humiliation, body and mind connection concepts

5. Communicating with other clinicians

6. Medication: antidepressant such as tricyclic antidepressant and especially in child and adolescence we recommend Serotonin and norepinephrine reuptake inhibitors (SNRIs) such as venlafaxine and duloxetine.

Management

1. Set goal and psychoeducation

2. Pharmacological intervention

Use antidepressant medication: in this case her doctor chose venlafaxine

3. Psychosocial intervention

Behavioral activation in day hospital and improvement of social skills

Set individual supportive psychotherapy and family therapy

Outcome

2 months later, the patient improved in mood condition. Her headache condition was better because of lesser severity and shorter duration than previous status. Now, the patient still continues to follow-up at both units. Her parents have a better understanding of her physical and psychological conditions, and cooperate in doing family therapy. She plans to take a test and transfer credits to study abroad.

CONCLUSION

This case is an example of how to manage a difficult chronic headache case. It is not common that general practitioners or neurologists would understand their patient's condition clearly, or would know that they should go to see psychiatrists. We must build therapeutic alliance and practice communication and counseling skill. Also doctors must reassure the patients that their medical condition was stable. Once the patient has been checked-up by the psychiatry unit, it is advisable that the two units' continue to collaborate to treat the patient, for the best outcome of management.

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