

# THE PATIENT WITH “HEADACHE AND DEPRESSION”

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## Case History

The patient was a 35-year-old single female, who was an attorney. Her headache history revealed that she was experiencing severe to incapacitating headaches approximately six times per month. These were especially prominent around her menses. The onset of these headaches was around age 12 years (associated with menarche). Her head pain had become more frequent in the 3 years prior to our consultation. Other headache triggers (in addition to menses) appeared to be sleep-pattern changes and “let-down” periods from stress.

Her headaches would start in the occiput and localize behind either eye (right > left) as pain intensified. There was no aura prior to the attack. Head pain was described as a throbbing sensation that would worsen with movement or exertion. The headache would last up to 2 days if untreated or if unresponsive to medication. Pain was associated with nausea, vomiting, dizziness, and photo- and sonophobia.

The patient also noted a mild to moderate headache once or twice each week. It was described as a “squeezing and tightness in the forehead and temples.” Pain was nonthrobbing in character, and there were no associated symptoms of migraine. She would take an over-the-counter medication, with benefit, once or twice each week.

There was a great deal of frustration and despair on the patient’s part as the frequency of her more severe headaches escalated. She felt increasingly helpless due to more frequent periods of headache disability. The patient “forced” herself to go to work, but felt less competent in performing her tasks. She had cut back on social activities as “I just want to be at home after a day of bad headaches.” This was especially true in the anticipation of the more severe headaches associated with her menses.

The patient’s medication intake included oral sumatriptan 100 mg for her more severe headaches. This offered good to total relief, but there was headache recurrence approximately 50% of the time (which necessitated repeating the sumatriptan the next day). The second dose of sumatriptan was effective in eliminating the headache altogether. She used aspirin, acetaminophen, or ibuprofen for the less severe headaches. The patient took 2 or 4 tablets a maximum of 2 days per week. She took vitamin B<sub>2</sub> and magnesium. There was no history of medication allergies.

She had been given a variety of abortive and preventive agents in the past in an effort at better headache control. Over-the-counter and prescription “combination medications” had been ineffective for her more severe headaches. Nonsteroidal anti-inflammatory drugs, “long-acting” triptans, and ergotamine preparations had been utilized around her menses without benefit. Beta-blockers had caused decreased libido and had made the patient “sluggish and tearful.” Calcium channel blockers had caused constipation. Divalproex sodium seemed to reduce her headache frequency, but caused nausea and gastrointestinal distress. Topiramate caused confusion. Tricyclic antidepressants produced weight gain and significant mouth dryness when taken in therapeutic doses.

Medical history revealed that the patient had not suffered any episodes of head or neck trauma, loss of consciousness, or seizure disorder. She noted “low normal” blood pressure with occasional periods of “lightheadedness” secondary to postural changes. The patient complained of cervical tightness and bruxism (but no apparent temporomandibular joint click or pain). She denied other medical problems.

Psychiatric history revealed that the patient had seen a psychiatrist “to help sort through some family problems” when she was in high school. She had seen a psychologist when she was in college “for a depressed mood after a rela-

tionship ended.” The patient was considering returning to therapy at the time of our consultation “to deal with career issues and unhappiness in my life.” She had not had any biofeedback or relaxation training previously.

The patient had magnetic resonance imaging (MRI) of her brain approximately 6 months prior to our consultation. The study was read as being within normal limits. Her headaches had not changed qualitatively since the MRI, although the severe headaches had become more frequent. She had no other neurologic studies, and a recent neurologic examination was said to be unremarkable.

From a habit perspective, the patient did not smoke cigarettes, limited her alcohol consumption (red wine could trigger a headache), and denied having any history of substance use or abuse. She limited her caffeine consumption to one cup of coffee each day. Long-standing sleep problems were noted, which included initial insomnia with a 1-hour sleep onset latency. Sleep was somewhat restless as the patient had nocturnal bruxism as well as a tendency to “toss and turn.” Although sleeping 8 to 10 hours a night, the patient felt lethargic each morning. She noted decreased libido and felt guilty that her significant other had “to put up with me.” The patient was frequently tearful and, at times, extremely irritable.

Family history revealed that the patient was single and had never been married. She had a significant other, who was said to be empathic and supportive regarding her headaches. He encouraged the patient to remain as active as possible but “was always understanding” when she could not perform daily tasks and/or had to cancel social functions.

The patient had two younger sisters. She described a good relationship with them. Both parents were said to be still living and in good health. There were no areas of significant family conflict that might have been negatively affecting her headaches. Family history was positive for migraine headaches (her mother and both sisters). There was a positive history of clinical depression (her mother and one sister).

Vocational history revealed that the patient was a corporate lawyer. She had relocated to a new job 3 years prior to our consultation and found the work “interesting, but more challenging than my previous position.” The patient worked 10 to 14 hours, 5 days each week, with “occasional” work on the weekends. She had frequent deadlines to meet and noted “some stress and competition with some of my colleagues.” She would frequently take work home with her. On weekends, she “just wants to stay in bed...I feel overwhelmed.”

The patient indicated that she had significantly decreased her exercise activities due to the time demands of her job and the frequency of her head pain. She had been quite active historically, having a regular exercise routine that took her to her health club 4 to 5 days each week. Tennis had been a favorite activity on weekends. The patient felt that she “never felt relaxed” and was

always “moving from one deadline to the next.” She would ruminate about her day’s activities prior to going to sleep each night. Usual pleasurable activities were “not much fun anymore.”

Personality data from the Minnesota Multiphasic Personality Inventory-2 (MMPI-2) suggested that the patient was experiencing a moderate degree of clinical depression. Her defense structure did not appear to be effective in coping with the psychological distress of her world. Somatic concerns and feelings of vulnerability were apparent. She had a lowered level of energy, and social withdrawal was likely.

## Questions on the Case

Please read the questions, try to answer them, and reflect on your answers before reading the author’s discussion.

- What are the tentative diagnoses for this patient?
- What comorbid factors may be relevant in the diagnosis and treatment of this patient?
- What pharmacologic and nonpharmacologic treatment strategies would be appropriate for this patient?

## Case Discussion

The patient was given the following diagnoses:

1. Migraine without aura, for the severe to incapacitating headaches that occurred approximately six times each month
2. Episodic tension-type headaches, for the mild to moderate headaches that she experienced 1 or 2 days each week
3. Dysthymia, because the patient’s symptom pattern (sleep difficulties, lethargy during the day, anhedonia, tearfulness, decreased libido, etc), her history of “mild depression,” and the significant family history of depression made it likely that her mood state was due to ongoing affective difficulties and not merely secondary to situational variables

Several recent population-based studies have demonstrated a comorbid relationship between migraine and depression. Similarly, a relative lack of serotonin has long been implicated in the etiology of migraine headache. “Old-generation” antidepressants (eg, amitriptyline) and “new-generation” agents (eg, fluoxetine and venlafaxine) have shown promise as effective preventive agents in the treatment of migraine. A recent review concluded that antidepressants were effective in the treatment of headache, independent of type of headache (migraine versus tension-type) or class of agent (tricyclic antidepressants versus selective serotonin reuptake inhibitors).

Multimodal assessment and treatment strategies are important in effective treatment planning for patients with

migraine who have comorbid affective issues. The symptoms and suffering of patients with migraine must be viewed in a context of treating the "whole person" and not merely the alleviation of head pain.

Development of a comprehensive treatment plan involved a complete clinical interview (assessment of not only headache data, but also quality of life issues, extent of disability, and the presence of biobehavioral markers that would suggest an underlying affective disturbance). It also included an analysis of psychometric data (MMPI-2) and (perhaps even more importantly) the assessment of the patient's subjective feelings with respect to the impact of headache on daily life, her perception of mood issues, and her goals of treatment. Comorbid medical and psychological problems that exist in such migraine patients should be treated both pharmacologically and nonpharmacologically.

Treatment planning for this patient started with an evaluation of her current abortive headache treatment and whether the addition of a preventive medication would be effective in reducing the patient's migraine frequency, improve her mood state, and allow an improved quality of life. With respect to the former, the patient felt that her use of sumatriptan was effective in the treatment of her head pain. When advised that there were other "long-acting" triptans that could possibly be more effective in preventing headache recurrence, the patient felt that she would prefer to stay with the sumatriptan, as the second dose was always effective in relieving her migraine pain. She was pleased, however, that there were other treatment options available.

The use of a preventive agent that would affect serotonin for the treatment of both her migraine and mood issues was discussed. The patient was reassured that the presence of comorbid depression and migraine was not unusual, and that both issues could be addressed simultaneously. She was willing to take an antidepressant as a preventive medication, but had two concerns. The first was "I don't want to take an 'old antidepressant' like the one that caused me to gain weight and have horrible mouth dryness." The second was "I don't want to take (paroxetine) because my sister took it and didn't feel good." Since it was felt that there was likely some anxiety present in addition to her dysphoric mood, citalopram was chosen with a starting dose of 20 mg and was to be increased to 40 mg after 1 month. She was advised as to potential side effects and encouraged to contact her physician should significant adverse events develop.

Comprehensive treatment of this patient involved a series of steps to enlist her as an "active participant" in her treatment. Such an approach started with *education* about her medical status and proposed treatment. This allowed the patient to have a more in-depth understanding of the treatment modalities and an improved sense of empowerment that countered her underlying feelings of helplessness.

To enhance further the development of an "internal locus of control," *dietary and lifestyle variables* that had been shown to be operative in migraine patients were reviewed. A "migraine diet" was given to the patient to minimize the impact of potential food triggers. Caffeine intake was kept at one cup of coffee each day. Similarly, the importance of having consistent eating habits (ie, not missing meals) was emphasized. The need to reestablish her exercise routine was stressed as an important (and necessary) part of her overall treatment.

The need for such patients to develop regular and consistent sleep patterns was discussed. It was felt that the use of citalopram and increased exercise would be helpful in correcting her sleep difficulties. In addition, it was decided that a course of *biofeedback and self-regulation* would be helpful to treat her sleep problems and to improve her ability to cope with her stressful job and lifestyle. Cognitive and behavioral coping skills were learned to facilitate the development of "action plans" at the time of onset of head pain and to be utilized to "recover" from stressful situations. This took place over six sessions.

Such treatment preceded a more formal *cognitive therapy* that targeted her negative attitudes and beliefs that were fundamental in her pain experience and were part of her long-standing depression. The patient gained insight as to how her negative belief system and negative patterns of thinking (eg, catastrophizing, selective attention to her faults, magnification of minor errors) contributed to her overall negative self-image and led to a need to "overcompensate" for her perceived inadequacy and imperfection. At work and in relationships, this manifested itself by the patient needing to perform "perfectly" in order to avoid feeling badly about herself and to make herself worthy of love and respect. Over time, she was able to view her job as an aspect of her life and not the sole criterion by which she was to be judged. In relationships, she was able to feel more positive about herself and not view herself as "defective" because she was "imperfect and had migraines." After this work, she felt she "had started to live again...I was merely surviving before."

From a headache perspective, there was no change in her migraine frequency during the first month of treatment. There was a decline, however, in the frequency of her tension-type headaches (from 6 to 8 attacks each month to only 3 during the month). The patient felt that the biofeedback therapy had been effective in helping her to recover from stressful situations and to reduce tension. In addition, she had started to exercise once again. The quality of her sleep seemed better, and she experienced shorter sleep onset latency.

As noted previously, the citalopram dose was increased from 20 mg to 40 mg after the first month of treatment. This decreased her migraine frequency from six attacks

per month to four in month 2, two in month 3, and one in month 4. Menses remained a migraine trigger each month. The frequency of her episodic tension-type headache continued to decline, and the patient felt that these headaches occurred “rarely.”

Starting at the end of month 2, the patient had few times of disability secondary to her migraine headaches. She was able to participate in pleasurable activities and enjoyed social events. Subjectively, she felt more energetic.

The treatment plan called for the patient to continue with the citalopram for 6 months, and then consult with her physician regarding the merits of decreasing and discontinuing the agent. The patient agreed with this plan. She had finished her cognitive therapy by month 4 and was to contact her therapist on an “as needed” basis only.

In summary, comorbid affective issues (eg, depression) are frequently part of the clinical presentation of migraine patients. Comprehensive assessment and treatment offers the best opportunity for symptom alleviation in such patients.

## Selected Readings

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## Editorial Comments

Dr. Weeks has put forth an excellent discussion of migraine and psychiatric comorbidity using a representational clinical case not uncommonly encountered in patients with frequent headache. We have come a long way from looking at the association of migraine and psychiatric disorders as cause and effect. Research by Dr. Breslau, pointing to shared mechanisms, may well be at the core of these observations, given the roles of serotonin, norepinephrine, dopamine, and gamma-aminobutyrate in both migraine and affective and anxiety disorders. Uncovering and addressing this comorbidity clinically is key in improving outcomes. Use of self-administered and easily scored inventories such as the Hamilton or Beck inventories may aid in identifying these issues in patients, given the fact that the MMPI requires some sophistication in interpretation.

### FINAL DIAGNOSIS:

Migraine and depression