

Expert Opinion

The Alice in Wonderland Syndrome

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Q1 Key words:

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Rare migraineurs have strange symptoms where the diagnosis may be lurking just down a rabbit hole.

CLINICAL HISTORY

Case 1.—A 31-year-old woman has a 10-year history of mild headaches occurring about once in a month. For the last 6 months, the headaches have increased in frequency and severity occurring 5 days per week and are described as a pressure around her eyes with nausea and light sensitivity typically of moderate intensity but severe once a week lasting many hours. There was no aura. There is no family history of migraine. Neurological examination was normal. A MRI scan of the brain was normal. She was started on topiramate 25 mg daily to be increased by 25 mg per week to 100 mg per day.

When seen in follow-up 1 month later, the headaches were mild and had decreased to 1 or 2 per week. However, she reported having five episodes during the prior 3 weeks lasting 2-3 minutes and followed by a mild pressure headache behind her eyes lasting 30-45 minutes without medication. With three of the episodes, she felt like her entire body was too big and everything else was too small. With two of the episodes, she had a feeling that her entire body was too small and everything else too big. During the episodes, however, everything actually looked normal and she was aware her abnormal feeling was not real. An EEG was normal.

On follow-up 5 weeks later, she reported eight episodes all lasting about 5-10 minutes. During four of the episodes she reported feeling too small and with two, too big. With two episodes, she would feel too big for about 5 minutes and then too small for about 5 minutes. All of the episodes were followed by the mild headache lasting about 1 hour.

Case 2.—A 27-year-old woman has had identical episodes since the age of 12 occurring about two times per week. Suddenly, objects in the center of vision expand and seem too big for about 2-3 minutes. However, if she is looking at someone's face, she does not notice any change. Then she develops a severe bitemporal throbbing associated with nausea, light, and noise sensitivity lasting about 2 days. Naproxen sodium may dull the pain but oral sumatriptan does not help. The headaches may be triggered by heat. Family history is negative for migraine. Neurological examination is normal.

Questions.—What is the derivation of the name of this disorder? What are the clinical manifestations and pathophysiology? Are there causes other than migraine? Is diagnostic testing indicated? Are preventative medications beneficial?

(P.S. I had seen no similar cases in 25 years and then these two patients' initial visits were 8 weeks apart. I am sure many of you have had similar experiences with rare disorders being seen in the proverbial 3's or so in a short period of time.)

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Q2

EXPERT COMMENTARY

These two fascinating cases highlight aspects of the "Alice in Wonderland" syndrome of distortions of

body image. Although most common with migraines, it has also been reported after viral encephalitis (peculiarly, especially after Epstein-Barr virus) and as an epileptic phenomenon.

This syndrome was named by Todd in the "Canadian Medical Association Journal" for November 1, 1955, describing "a singular group of symptoms intimately associated with migraine and epilepsy." Although this article gave the syndrome its name, the first actual description of this phenomena was by Lippman in his 1952 paper "Certain Hallucinations Peculiar to Migraine," where he drew attention to seven patients he had seen with migraines accompanied by unusual distortions of body image. Often these appeared as migraine equivalents in which the hallucinations constituted the entire attack. For example, one patient had the sensation of "her left ear ballooning out six inches or more." Another patient described his sensations as "the body is as if someone had drawn a vertical line separating the two halves. The right half seems to be twice the size of the left half."

Various types of distortions have been described as "Alice in Wonderland" syndrome including a sense of time speeding up or time slowing down. If a narrower definition of the syndrome is used referring only to a distortion of body image, case 2 would be classified as macropsia. Patients with "Alice in Wonderland" syndrome may be of any age, though the syndrome, like migraine, is more common in young people. Children seem especially susceptible. Patients are aware of the illusory nature of their perceptions and are sometimes reluctant to admit to them for fear of being thought insane. This sensation of formed body distortions, a type of metamorphopsia, appears to be caused by migrainous ischemia. Most authorities believe, based in part on direct electrical stimulation studies of the brain, that these body distortions, a type of metamorphopsia, arise primarily in the posterior parietal lobe, especially in the nondominant hemisphere. Migrainous ischemia and irritability in this area produces the bodily distortions.

This syndrome derives its name from the book "Alice's Adventures in Wonderland" published in England in 1865 by Charles Lutwidge Dodgson un-

der the pseudonym of Lewis Carroll (the Latinization of Lutwidge Charles). Dodgson was a Professor of Mathematics at Oxford University and his fiction works, including "Alice's Adventures in Wonderland" and its sequel "Through the Looking Glass" contain many mathematical puzzles, logical paradoxes, puns, and political satire.

The neurologic syndrome derives its name primarily from the opening scenes after Alice jumps down a rabbit hole and lands in a hallway where she finds a bottle which she drinks that causes her to shrink: "I must be shutting up like a telescope. And so it was indeed: She was now only 10 inches high . . ." Later, she eats a piece of cake that makes her grow: "Curiouser and curiouser cried Alice. Now I am opening out like the largest telescope that every was! Goodbye feet! (For when she looked down at her feet they seemed to be almost out of sight they were getting so far off.)"

The patients described by Dr. Lippman reported similar phenomena, such as his first case: "Occasionally the patient has an attack where she feels small, about 1 foot high." Another patient noted "I feel that my body is growing larger and larger until it seems to occupy the whole room."

This syndrome is sufficiently distinctive that usually no further work-up will be needed. Therapy can proceed as with other forms of migraine, employing both prophylactic and acute treatments as indicated.

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