



## CASE REPORT

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## A Case Report in Teenager Age: Is Lying Position a Trigger of Visual Sensations In Alice in Wonderland Syndrome?

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### ABSTRACT

Alice in Wonderland Syndrome (AIWS) was named after the description of Lewis Carroll in his novel. In 1955, John Todd, a psychiatrist described this entity for the first time. Todd described it as “Alice's Adventures in Wonderland” by Lewis Carroll. The author Carroll suffered from severe migraine attacks. Alice in Wonderland Syndrome is a disorienting condition of seizures affecting the visual perception. AIWS is a neurological form of seizures influencing the brain, thereby causing a disturbed perception. Patients describe visual, auditory and tactile hallucinations and disturbed perceptions. The causes for AIWS are still not known exactly. Cases of migraine, brain tumors, depression episodes, epilepsy, delirium, psychoactive drugs, ischemic stroke, EBV, mycoplasma and malaria infections are correlating with AIWS like seizures. Neuroimaging studies reveal disturbance of brain regions including the temporoparietal junction, the temporal lobe and the occipital lobe as typical localization of the visual pathway. We present the case of a 17 years-old teenager from Canada, who describes his experience with AIWS-like visual disturbances in detail. The case report shed light on the *presence of a lying position* in Alice in Wonderland like visual sensations.

### ARTICLE HISTORY

Received Nov 06, 2020

Accepted Nov 12, 2020

Published Nov 17, 2020

**Keywords:** AIWS, Teenager, Visual Sensation

### Case Report

This report shed light on a 17yr old male living in Calgary, Canada, and his personal description:

“In the last year I have noticed myself often having strange visual problems when going to bed. I found I felt incredibly tiny in my bed, a mere ant, and everything felt so far away. Yet, I somehow felt extremely big. My body felt very large, disproportionately so, but my mind somehow felt very far away. The condition of being very large (with objects far away) or being very small in a very large room, alternated depending on what I was thinking about. It was so rapid I usually got a headache as well. I did research into this and I felt fairly certain I have Alice In Wonderland Syndrome. These episodes have been happening for as long as I can remember but have become extremely common in the last year or so. It has gotten to the point that multiple nights per week I get the symptoms I described above and often cannot fall asleep for a very long time. This syndrome (I'm fairly certain I have) is causing me sleepless nights and, as a result, tiredness during the day. It has occurred once or twice during the day but almost always happens when I've been in bed for 10-20 min when trying to fall asleep. There doesn't really seem to be a trigger. I am just lying there and my eyes (or I guess the area right behind my eyes) feels almost sore and then the distortions start occurring and a headache follows. I usually sleep on my right side but I haven't noticed a specific position I always get the sensations

in. It feels like I am somehow perceiving the world further back. Everything in the room feels very far away, even my own body. I feel small because the room, which size I know, seems so big, but I feel large because my toes seem to be very far away which would make me very tall. If I am looking at myself I feel very large, like a giant. It sort of feels like I am a normal sized person controlling a giant robot body or something. If I am looking at the rest of the room I feel very small. I'm not sure because it usually happens when I'm in bed. I think there is probably no change in time perception; if there is a change then it would be a slowed time perception because I don't notice time going any faster. I do feel hyper alert though. I almost always get these episodes when in bed. I remember once when I was younger I got it sitting and I got another in August of this year when I was sitting playing a board game in the afternoon. They have always occurred when lying down besides those 2 times”.

### Description of Visual Sensations in Times of Seizure in Detail

“I'm lying there, trying to fall asleep, when I notice a strange sensation behind my eyes (almost like a headache but not really), then when I open them everything seems further away. The room, everything in it, my feet, just everything. It all seems further away. This makes me feel small when looking at the room because I know the size of my room so for it to look so far away, I must be very small. However, when I look at my feet I feel huge, like a giant or something, because I know how far away I think my feet should be but they seem much further away, which makes me seem very large. Mostly the symptoms are visual; the

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only non-visual sensations I can think of are noises seem more extreme and are not pleasant, looking directly at a light source feels good, I feel like my mind is more aware but at the same my body feels weird (I guess because it feels too big)".

### Discussion

In young children, migraine attacks can cause Alice in Wonderland syndrome. It is named after the well-known children's book by the author Lewis Carroll and belongs to the so-called migraine equivalents [1,6-8]. A genetic aspect is assumed [9]. Alice in Wonderland syndrome is a distorted perception of the environment that often causes anxiety and irritation in children [5]. Things and bodies suddenly appear too big or too small in relation to themselves and space, or move in an abnormal way [6,7]. Emotional disturbances in hands and arms, speech disorders, disorders of tactile perception and visual disturbances such as flickering vision or flashes of light in front of the eyes are also described. Accompanying headaches, abdominal pain or nausea may occur. The children are confused, tired and withdraw. In addition to migraine, the syndrome can also be a harbinger of an epileptic seizure, drug use, encephalitis or Epstein-Barr virus disease [2]. Alice in Wonderland syndrome is a distorted perception of the environment and/or of oneself, which in most cases can be traced back to various underlying diseases such as epilepsy, infections with certain viruses, or drug abuse or physical abuse. An Alice in Wonderland syndrome, which is not considered a disease in its own right, usually manifests itself in the form of a metamorphopsia, through which objects are magnified (macropsy) or reduced (micropsy), further away (teleopsy, poropsy) or closer (pelopsis), distorted, deformed, spatially displaced (mirrored) In addition, an Alice in Wonderland syndrome can manifest itself through ego experience disorders (depersonalization, division of soul and body), a disturbed sense of time, ash patterns (disturbances of the body schema) as well as feelings of limbo and disturbances of the sense of hearing and touch [6,7]. Anxiety and panic attacks, pronounced fatigue and headaches, dizziness, vomiting and nausea can be further symptoms of Alice in Wonderland syndrome. In our case report, the patient realized the visual impairment only in lying position ("I'm lying there, trying to fall asleep, when I notice a strange sensation behind my eyes, almost like a headache but not really", surprisingly recognized a strange sensation "behind his eyes. The patient described it as "like a headache". Migraine episodes were denied, nor any drugs were taken. After this strange sensation the patient realized the objects in the room far away and sensations started. A trigger for the seizure was denied, but all these sensations were only found in lying position with a "strange sensation "before. Bittmann et al. described AIWS like-seizures also triggered by lying position in a meditation setting as first case in world literature [8]. This personal description of a 17 years old Canadian teenager shed once again light on the *role of body position as trigger* for AIWS like visual disturbances.

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