

LETTER TO EDITOR

## The Mysterious Alice in Wonderland Syndrome

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Alice in Wonderland syndrome (AIWS) includes a distortion of visual perception [1-12]. Visual distortions, hallucinations, depersonalization or derealization with hearing and time distortions are well-known features of the syndrome [1-9]. Symptoms of visual disturbances like macropsia, micropsia, pelopsia, telopsia and metamorphopsia are well-known neurologic manifestations [8-12]. The origin of Alice in Wonderland syndrome seems unclear, but recent publications shed light on a hereditary origin [8,12]. Disturbances of blood flow at temporoparietal junction are discussed. In these case reports, most often mother and son were affected with this serious condition [12]. In one familial case report, the mother and her daughter were affected by similar visual perceptions [9]. About 50-60 different symptoms were described in world literature in Alice in Wonderland Syndrome [1-4]. It is slightly more found in males. AIWS has been accompanied with infectious diseases, drugs, cerebral hypotheses, migraine and genetic and environmental influence [2,3]. It is most commonly seen in children [9,10]. Patients with Alice in Wonderland syndrome describe their childhood experiences often in later life, as they realize, that their visual disturbances had become a name and was classified as AIWS [5,8]. The role of migraine in Alice in Wonderland syndrome has not yet been clarified, but both vascular and electrical theories have been proposed. For example, the visual distortions may be the result of temporary, localized ischemia in areas of the vision during migraine attacks. In addition, a spreading wave of depolarization of cells (especially glial cells) in the cerebral cortex during a migraine attack can activate the regulation of the vascular system by the trigeminal nerve. The intense headache in migraine is due to the connection of the trigeminal nerve with the thalamus and the thalamic projections on the sensory cortex. The symptoms of Alice-in-Wonderland syndrome may precede, accompany, or replace typical migraine symptoms. Typical migraine attacks (aura, blurred vision, hemicranial headache, nausea, and vomiting) are both a cause and a concomitant symptom of Alice-in-Wonderland syndrome. The Alice-in-Wonderland syndrome is associated with macrosomatognosia, which occurs mainly during migraineurs. To date, there is no cure

treatment in this serious condition in childhood. Patients were treated for their migraine attacks, but AIWS perceptions were still not treatable. What remains, the origin of Alice in Wonderland syndrome is still unknown, the disease with no curable treatment. Recent publications come to the point, that AIWS like seizures were most often found in lying position, calm surrounding or meditation setting [8]. Moreover a few patients describe a special body part position (hands in bed) as a trigger in Alice in Wonderland like seizures [8]. This means, AIWS seems to be reproducible in any way, by body or body part positioning [8]. Further intensive research in this neurologic field is of utmost interest. In the future, in familials, DNA-next generation sequencing (DNA-NGS) and mutation analysis could help to find the origin of this mysterious syndrome.

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