

# Mysterious Alice in Wonderland like visual sensations one week after traumatic kick against the eye in a 5 years-old boy

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## Introduction

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 and results in a distortion of perception. 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 disturbances of brain regions including the temporoparietal junction, the temporal and occipital lobe as typical localization of the visual pathway. A decrease of perfusion of the visual pathways could induce these disturbances, especially in the temporal lobe in patients with AIWS. Other theories suggest distorted body illusions stem from the parietal lobe. The concrete origin of this mysterious syndrome is to date not clearly defined. This is the first case of a 5 years-old boy that a kick in the eye lead to Alice in Wonderland like visual sensations one week later.

## Case Report

The pregnancy of the boy was a light one, with a natural vaginal birth at 37 weeks and 3 days. The son was born with neonatal torticollis and further physiotherapy and now fully corrected normal muscle function. He had a birthmark with a portion of hair was darker. He had milk protein intolerance until 2 years and in October 2018 on single major cold with hospital stay. At 5 years he had the diagnosis of inguinal hernia and repositioning of the left testicle, which was floating. At 5 years he started speaking therapy for stuttering. The visual disturbances started one week after a kick against the eye in age 5. The boy showed micropsia of surrounding objects and this was present only in lying position. These micropsia episodes were started 1 week after kick against the right eye with swelling of the surrounding of the orbita. To date, they are not diminished and happen many times the day. The mother contacted me per email to describe these visual disturbances the origin of starting, a traumatic kick against the eye.

## 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 is one of the so-called

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migraine equivalents [1-4]. A genetic aspect will be supposed [4,5]. Alice in Wonderland syndrome is a distorted perception of the environment that often causes fear and irritation in children [1,6-8]. Things and bodies suddenly appear too big or too small in relation to themselves and the room or move in an abnormal way [1-7]. Emotional disorders in hands and arms, speech disorders, disorders of tactile perception and visual disorders, such as flickering vision or flashes of light in front of the eyes, are also described. Accompanying headaches, abdominal pain or nausea can occur. The children are confused, tired and withdraw. In addition to migraines, the syndrome can also be a harbinger of an epileptic seizure, drug use or Epstein-Barr virus disease. Recent research shed light on physical abuse as origin of AIWS [9,10]. The 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 basic diseases such as epilepsy, infections with certain viruses or drug abuse or physical abuse. An Alice in Wonderland syndrome, which is not considered an independent disease, usually manifests itself in the form of a metamorphopsia, through which objects are perceived enlarged (macropsy) or reduced (micropsy), further away (teleopsy, poropsia) or closer (pelopsis), distorted, deformed, spatially displaced (mirrored, upside down) or color-modified. In addition, an Alice in Wonderland syndrome can manifest itself through ego experience disorders (depersonalization, splitting of soul and body), a disturbed sense of time, ash patterns (disturbances of the body schema) as well as feelings of floating and disturbances of the sense of hearing and touch. Anxiety and panic attacks pronounced fatigue and headaches, dizziness, vomiting and nausea can be further symptoms of Alice in Wonderland syndrome. Bittmann et al. described AIWS like-seizures triggered by lying position in a meditation setting in the American Journal of Biomedical Science and Research [8]. In our case report, AIWS like

visual disturbances were present also in lying position. Referring to the common literature in this research field, this is the second case of AIWS triggering by lying position, moreover pediatrician should be aware of possible Alice in Wonderland like visual disturbances after traumatic injuries of the eye, like in our impressing case [8].

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