



## CASE REPORT

# Visual Snow Syndrome: A Case Report and New Treatment Option

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## Abstract

We present the case of a 47-year-old male who was diagnosed with Visual Snow Syndrome following extensive specialist consults and medical testing. With an unknown pathogenesis, Visual Snow Syndrome is very difficult to treat and there is no one treatment suited for all patients. The patient in this case report was successfully treated with Amitriptyline based on the hypothesis that Visual Snow Syndrome is a form of peripheral neuropathy and pituitary fatigue. With nearly 200 documented cases of visual snow worldwide [1], this case will add to the possible successful treatment options.

## Manuscript

Visual snow syndrome is a very rare disease which can be detrimental to patients. It is often described as a visual disturbance present in the entire visual field with flickering white and black dots, similar to the static seen on an analogue television [2]. With the increasing awareness of this condition, criteria have been created to diagnose this clinical syndrome. Criteria include dynamic tiny dots lasting longer than 3 months spanning the visual field, symptoms not consistent with a typical migraine visual aura, having normal visual tests and presence of at least 2 of the following 4 visual symptoms; palinopsia, enhanced entopic phenomenon, photophobia, nyctalopia [2].

A 47-year-old man with no prior medical history was in a motor vehicle accident. He was subsequently cleared by hospital doctors and promptly returned to work as a building developer. A day following discharge

he was utilizing a vibrating tool at work. Following its use, he noticed disrupted vision which persisted for months. His vision was described as continuous flashes of black and white which were constant with no variation throughout the day. He soon developed severe muscle pain, irritable bowel syndrome and lethargy (all symptoms of pituitary fatigue), however he had no neurological impairments. Multiple ophthalmologists and neurologists have performed tests and exams including MRI, VERs, Goldman field testing, visual acuity and fundoscopy. All results were reported as normal. His extensive evaluation demonstrated a functional disruption in vision without any structural abnormality. Following months of investigations and specialist consults, he was subsequently diagnosed with visual snow syndrome.

The overall pathophysiology is unknown, however there have been some theories postulated which include pathology related to the visual cortex, anterior to the optic radiations or beyond the lateral geniculate nucleus [1]. Visual snow syndrome has also been thought to be associated with both post-concussive syndrome and migraines, however, patients with no history of migraines nor concussions still suffer from visual snow syndrome. It has been reported that these patients are often treated with anti-depressants or anti-migraine medications [2], however no single treatment has worked for every patient.

The patient presented in this case report was treated successfully with amitriptyline, based on a hypothe-



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sis that visual snow syndrome is a form of pituitary fatigue and peripheral neuropathy. Endocrinologists often encounter patients with pituitary fatigue, it is described as a dysregulation of hormone production from the pituitary gland which can be caused by trauma, stress or severe illness. These patients often suffer from severe exhaustion, peripheral nerve pain and irritable bowel syndrome. In these patients, the hormone levels are adequate, however the circadian rhythm of the pituitary hormones is dysregulated. This ultimately leads to an imbalance of hormones at the neuromuscular junction [3].

As the patient presented suffered from symptoms of pituitary fatigue, it was hypothesized that an imbalance of hormones at the ocular muscle junctions led to his visual snow syndrome. Amitriptyline (a tricyclic antidepressant), functions by blocking the reuptake of serotonin and noradrenaline at the postsynaptic cleft [4]. This subsequently leads to an increased level of hormones which enables proper sensory function to be restored [3]. The patient was prescribed a low dose of 25 mgs per day, which is the same dose often given to uncontrolled diabetics who present with pituitary fatigue.

There are 200 documented cases of visual snow worldwide [1] and this case will add to the possible successful treatment options. There are still many unknowns regarding pathophysiology of visual snow syndrome. Once this is solidified, further research must be done to determine the best treatment options for these patients.

## Disclosure

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## References

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