Presistant Visual Noise (Visual Snow Syndrome)

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Introduction

VISUAL SNOW SYNDROM is a disorder of altered visual perception in which the patients see continuous flickering tiny black and white dots across the entire visual field of both eyes similar to the pixels of an old television.

The visual noise occurs 24/7 with eyes open and closed. Visual Snow is a part of unique syndrome that is different from visual aura in migraine. It was diagnosed for the first time in 1995 by Dr. Schankin MD Fellow in the department of neurology, University of California, San Francisco. Patients may describe other visual symptoms like floaters, afterimages, flashes in addition to headache, tinnitus, anxiety or depression. Most of the affected patients are young and otherwise healthy, often in the second to the fourth

decade of life. The cause of syndrome is unclear (1).

The supposed mechanism is excessive activity or excitability of the cerebral cortex neurons that including the thalamic reticular nucleus, Parietal lobe and pre frontal lobe. There is no cure for this syndrome until now (2, 3, and 4).

Method: 26 y old female, has attended our clinic, complaining from persistent noise in her vision (day and night 24/7) that described as black & white dots in the entire field of her vision.

Also she reported a difficulties in night vision in addition to other **non-ophthalmic symptoms** like headache, tinnitus, loss of appetite and pain in temporo -mandibular joint.

The patient past **medical history & drug history** were negative.

Figure 1: The above 2 images showed the visual noise that seen by the patient of visual snow syndrome, while the lower 2 images explain the dark adaptation problems in those patient.

Ophthalmic examination was normal with 6/6 vision, normal color vision (15/15 OU) and normal anterior segment and fundus exam in both eyes.

Visual field test (Humphrey 24-2) and OCT retina imaging were normal.

Figure 2: The ophthalmic examination was normal with 6/6 vision, normal color vision on ishihara test, the Humphry visual field and SS-OCT image (TRITON) were normal with normal foveal contour and intact IS-OS junction in both eyes

Neuroimaging (Brain MRI) was normal. EEG: was normal.

The patient was referred to neurologist to exclude migraine aura or any other neurologically associated condition.

The neurologist report was normal with no any clear link between the patient complain and migraine.

Figure 3: EEG & BRAIN MRI of the patient that were normal (No Findings).

FDG PET BRAIN METABOLIC IMAGING.

Figure4: FDG PET /CT scan: Following IV injection of 18-fluoro-2-deoxyglucose (FDG) and a standard uptake period, 60 minutes, the patient was imaged on a Biograph mCT, Siemens (TOF, 128 slice) scanner. After a noncontrast enhanced CT image was acquired for photon attenuation correction, multiple three-minute bed position acquisitions were obtained from the vertex to the skull base. DOSE: 150 MBq /CORRELATION.

FDG PET/CT scan findings:

There is evidence of asymmetrical temporal lobe metabolism which appears to be slightly reduced on the left compared to the right, yet within acceptable limits for age and with no focality.

Normal metabolic activity within both parietal lobes.

Normal metabolic activity within both occipitoparietal regions, and occipital lobes with no evidence of any hyper or hypometabolic regions.

Conclusion & Discussion

“Visual Snow” is a life disabling disorder with patients complaining of continuous flickering dots (TV Noise) in the entire visual field (1). The ocular and neurological exams and neuroimaging studies are unremarkable. The suggested pathophysiology is chemical imbalance between glutamic acid & gamma amino butyric acid (GABA) in the high visual centers of thalamus, parietal & prefrontal lobe (4).

The neuroimaging studies of the visual snow syndrome cases showed a hyper metabolism in visual cortex and lingual gyrus in compare to healthy control.

In our case FDG PET scan didn't show any metabolic hyperactivity in the high visual centers rather than showing **asymmetri-**

cal temporal lobe metabolism with normal metabolic activity which not goes with visual snow syndrome findings in the literatures.

The syndrome is still complex and not well understood, differential diagnosis includes migraine, visual hallucination, concussions and drug side effects, it usually affects the young age group and rarely disappears once it appears. In the last few years medical community has begun to recognize this syndrome. The latest recommended updated helpful medication for this syndrome according to the (a case series of 54 adults in UK by Dr. Mark Weatherall) were: (Riboflavin 400mg, Magnesium citrate 600mg, acetazolamide and levetiracetam)(5).

Conflict of Interests

The authors declare that there is no conflict of interests regarding the publication of this paper.

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