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A Rare Case of Visual Symptoms Due to Isotretinoin Therapy

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ABSTRACT

Isotretinoin has been a long-standing medication used to treat acne, with a gradual increase in the dose during therapy. A typical treatment course lasts 4-6 months.[1] It has been shown to inhibit sebaceous gland functioning and keratinization.[2] The most common adverse effects include xerostomia, cheilitis, dry nose, and sun sensitivity. Less common adverse effects include itching, irritation, hair thinning, dry eyes, rash, muscle aches, and joint pain.[2] There has also been reported increased depression and suicidality as a result of Isotretinoin treatment.[2] Notably, the black box warning on Isotretinoin is in its potential to cause severe birth defects.

Ocular side effects are less common but can include corneal opacities, decreased dark adaptation, keratitis, blurred vision, conjunctivitis, photophobia, myopia, Meibomian gland atrophy, and teratogenic ocular abnormalities.[3]

Only 1 case has been reported in the literature demonstrating visual hallucinations as a result of Isotretinoin treatment, which subsided when the treatment was discontinued.[4] This report presents a second case of visual disturbance as a side effect of isotretinoin.

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KEYWORDS

photopsia; hallucinations; acne; visual changes; isotretinoin

INTRODUCTION

Isotretinoin is commonly used to treat acne. Adverse events have been reported in the literature;[5] however, visual disturbances are rarely reported. The literature review provided only 1 unique case of visual hallucinations due to isotretinoin therapy.

The case described in this report was challenging, as it involved a young adult with no prior medical illness. The pathophysiology remains complex to explain his presentation. Understanding the physiology and mechanism of action of isotretinoin, especially at the central nervous system receptors level,[6] might further elucidate this case's clinical manifestations.

Acne is a very common disorder, and isotretinoin therapy has its prescribing limitations and warnings, including ones for the central nervous system. This case aims to provide insight into the medical literature and alert physicians of these rare visual side effects; future research may need to be conducted into the dosing and titration of the medication to prevent visual side effects. If a causal relationship is reported in the future, visual disturbances might be among the precautionary side effects to discuss with patients prior to therapy.

CASE REPORT

A 23-year-old male was prescribed Isotretinoin treatment for acne, as other treatments were not very helpful. His initial dose of 40 mg was titrated gradually to 80 mg after 2 months of therapy with good clinical tolerance and improvement and no

significant adverse events except facial dryness. Five months into therapy, the patient developed acute visual disturbance, described as colorful green, blue, and black circular floaters that would flash intermittently throughout the day, lasting for 2 weeks, with no other ocular symptoms, such as discomfort, pain, or even headaches. The patient never had similar symptoms, auras, or migraines. No family history of migraines was noted. An immediate evaluation was conducted in the emergency department with no major findings. Laboratory findings were normal. MRI of the brain along with CT angiography of the brain were unremarkable. The patient had an emergency ophthalmological evaluation and outpatient workup, only revealing incidental right choroidal nevus. The symptoms improved within a week or 2 after the medication was discontinued, with no recurrence.

DISCUSSION

Visual disturbances along with hallucinations have different etiologies, including photopsia, retinal disorders, migraines, occipital lobe seizures, lesions involving the visual pathway, and psychiatric disorders, in addition to medication side effects such as neuroleptics, sedatives, cardiac medications, and dopamine agonists.[7]

In this case, the patient was otherwise healthy, with no predisposing or precipitating factors to explain his symptoms; it was clear that the introduction of Isotretinoin caused his visual symptoms. The patient did not experience any other side effects associated with the treatment aside from facial dryness. To the author's knowledge, this is only the second case in the literature with a clear visual causal relationship.

It is unclear why the patient's symptoms developed several months after treatment initiation. The dosing and titration were appropriate in this case. The patient had no recurrence of symptoms following discontinuation of the medication. The possibility of recurrence of symptoms with a medicine with a similar mechanism of action is unclear.

The authors hope this case will bring insights into the medical literature regarding isotretinoin's mechanism of action, which might help the medical community better understand its adverse effects, such as the rare ocular ones reported.

The vitamin A derivative in Isotretinoin may be implicated in visual pathway chemical signaling and color vision functioning, which is controlled by the retinal cones and may apply to our case.[8] Further literature review has shown that retinoid receptors are located in the limbic system and may have implications with serotonin, dopamine, and other neurotransmitters,[9] potentially triggering neuropsychiatric symptoms reported with Isotretinoin.[10]

CONCLUSION

Clinicians should remain vigilant to continue monitoring patients closely during therapy, and they need to warn patients of the risks of adverse central nervous system events associated with this medicine.[10] Notably, Isotretinoin is widely used in our young population to treat acne, a common disorder affecting millions of young adults.

INFORMED CONSENT

Informed consent was obtained by the patient.

CONFLICTS OF INTEREST

The author declares that there are no conflicts of interest.

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