

Case Report

A Rare Case of Visual Decline due to Intradiscal Ozone Therapy in a Patient with Spinal Stenosis

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Abstract

Spinal stenosis is generally described as the narrowing of the spinal canal, causing compression of the spinal cord. Ozone therapy, which is a minimally invasive method, can be used to treat these patients. Like any other therapeutic method, this technique may have certain side effects. Here we report a case of severe visual decline caused by anterior ischemic optic neuropathy in a 75-year-old male patient who underwent ozone therapy for spinal stenosis.

Keywords: Spinal Stenosis; Intradiscal Ozone Therapy; Visual Decline; Visual Evoked Potential.

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Introduction

Spinal stenosis is a condition characterized by the abnormal narrowing of the spinal canal, primarily in the lumbar and cervical regions ¹. Oxygen-ozone therapy has emerged as an effective treatment method for this condition ². However, like any other surgical procedure, this technique may be accompanied by certain side effects, including sweating, abdominal pain, paresthesia, headache, bradycardia, dizziness, and visual disturbances such as transient scotomas and cortical blindness ³⁻⁵. In this report, we present a case of severe visual decline in a 75-year-old male patient who underwent ozone therapy for his spinal stenosis.

Case Report

A 75-year-old male patient presenting with severe decline in visual acuity (light perception in both eyes) was referred to Basir Eye Clinic, Tehran, Iran, for a visual evoked potential (VEP) evaluation. Upon reviewing the patient's medical history, it was revealed that he had undergone ozone injection surgery for spinal stenosis. Two days after the operation, he experienced a significant loss of visual acuity.

A comprehensive examination including erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP), CBC count dilated eye exam, visual acuity and visual field exams, IOP measurement, and fluorescein angiography were performed and the patient was ultimately diagnosed with anterior ischemic optic neuropathy.

Given the patient's condition, flash-type stimulation was employed to record the VEP. There was a noticeable delay in the P100 peak of the VEP wave form in both eyes measuring 132 milliseconds in the right eye and 144

milliseconds in the left eye (The normal value for the VEP P100 peak on our instrument is approximately 100 milliseconds). This delay serves as an indication of visual pathway disturbances affecting both eyes.

Based on the history and exam results the patient was ultimately diagnosed with anterior ischemic optic neuropathy following Ozone therapy.

Discussion

Here, we report a case of severe visual decline in a 75-year-old male patient who underwent ozone therapy for his spinal stenosis. While ozone therapy has shown promise in managing spinal stenosis, it is crucial for healthcare professionals to be aware of the potential adverse effects, particularly those affecting vision. The reported cases of visual disturbances following ozone therapy for spinal conditions raise important considerations regarding the safety and potential risks of this treatment modality ^{5,6}.

In a case reported by Vaiano et al.,⁵ the patient experienced bilateral blindness immediately after the ozone injection. The accompanying symptoms of severe frontal headache, vomiting, and nausea suggest a possible systemic reaction to the therapy. Magnetic Resonance Imaging (MRI) indicated ischemic lesions in the occipito-parietal cortex ⁵. Fortunately, the patient achieved complete visual recovery after a two-month follow-up. Lo Giudice et al.,⁶ documented a case of acute bilateral intraocular hemorrhages following the injection of an oxygen-ozone mixture. Although the specific mechanism underlying this complication is not fully understood, it highlights the potential for ocular damage associated with ozone therapy.

These cases underscore the importance

of thorough patient evaluation, including a comprehensive medical history and examination, prior to initiating ozone therapy. Patient selection criteria should be carefully considered, taking into account any pre-existing ocular conditions that may increase the risk of complications. Additionally, close monitoring of patients during and after the procedure is crucial to promptly identify and address any visual adverse events.

Conclusion

While ozone therapy has demonstrated effectiveness in treating spinal conditions, it is crucial to be mindful of the potential risks associated with the procedure, including the occurrence of visual disturbances. To mitigate these risks, healthcare professionals should exercise careful patient selection, considering factors such as pre-existing ocular conditions that may heighten the susceptibility to ocular complications.

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Footnotes and Financial Disclosures

Conflict of interest:

The authors have no conflict of interest with the subject matter of the present manuscript.