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Visual Recovery in a Case of Drug Induced Optic Neuropathy with No Clinical Signs and Unusual Symptoms - A Case Report

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Abstract: ***Many drugs have been associated with optic nerve disease. (1) Ethambutol is one of the routinely used anti tubercular first line drug, a study found that Ethambutol optic neuropathy is not always reversible, especially, in older populations. (2) We present this case report of a 19-year-old male who presented with vague complains of photopsia and loss of sharpness of edges and mild pain on eye movement on medial side.***

Keywords: Optic neuropathy, anti-tubercular drugs, VEP, ERG

He was under treatment for MDR-TB for 8 months and the drug regimen included ethambutol, Linezolid and other first and second line drugs.

His visual acuity in Both eyes was 6/6 with glasses.

Bilateral pupils were briskly reacting to light.

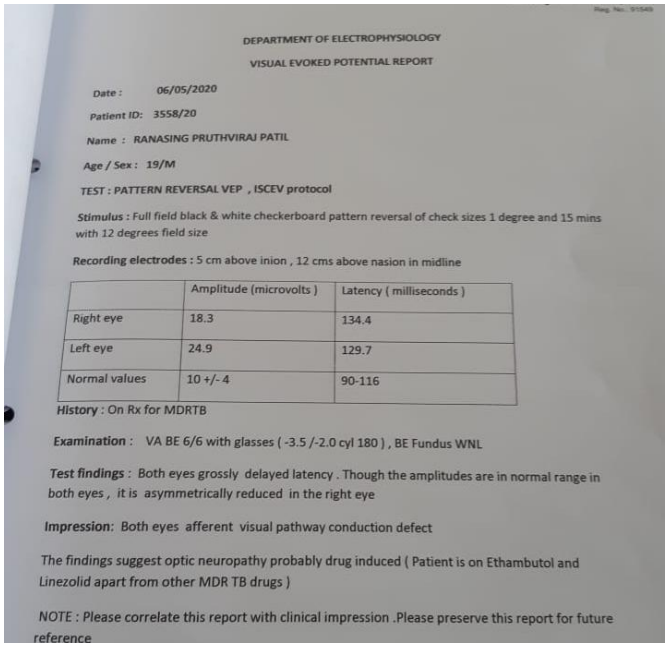
Color vision was normal in BE with Ishihara chart testing.

Fundus examination revealed absolutely normal disc and macula of BE with normal foveal reflex and background retina. Figure.1.0

Figure 1: Fundus picture of Both eyes showing normal disc and macula.

Visual field testing of Both eyes was also found within normal limits.

The only abnormality found was in the Visually Evoked Potential, which showed grossly delayed latency in both eyes with normal amplitudes but asymmetrically reduced in right eye.Fig.2.0



DEPARTMENT OF ELECTROPHYSIOLOGY

VISUAL EVOKED POTENTIAL REPORT

Date : 06/05/2020

Patient ID: 3558/20

Name : RANASING PRUTHVIRAJ PATIL

Age / Sex : 19/M

TEST : PATTERN REVERSAL VEP , ISCEV protocol

Stimulus : Full field black & white checkerboard pattern reversal of check sizes 1 degree and 15 mins with 12 degrees field size

Recording electrodes : 5 cm above inion , 12 cms above nasion in midline

	Amplitude (microvolts)	Latency (milliseconds)
Right eye	18.3	134.4
Left eye	24.9	129.7
Normal values	10 +/- 4	90-116

History : On Rx for MDRTB

Examination : VA BE 6/6 with glasses (-3.5 /-2.0 cyl 180) , BE Fundus WNL

Test findings : Both eyes grossly delayed latency . Though the amplitudes are in normal range in both eyes , it is asymmetrically reduced in the right eye

Impression: Both eyes afferent visual pathway conduction defect

The findings suggest optic neuropathy probably drug induced (Patient is on Ethambutol and Linezolid apart from other MDR TB drugs)

NOTE : Please correlate this report with clinical impression .Please preserve this report for future reference

Figure 2: Pattern Reversal Vep

Also, the multifocal Electroretinogram showed marked reduced sensitivity of macula in Both eyes.

He was advised to stop Ethambutol and Linezolid after consulting the chest physician, resulting in resolution of symptoms within a week.

Hence, he was diagnosed to have drug induced Optic neuropathy, with normal vision, color vision and fundus and abnormalities only in the Visually Evoked Potential and multifocal electroretinogram.

1. Case Report

A 19 years old male presented with the subjective symptoms of photopsia and abnormal “bright edges” seen by him.

He was under treatment for MDR TB for 8 months, the drug regimen included Ethambutol and Linezolid.

His vision in both eyes was 6/6 with myopic correction.

Bilateral anterior segment was normal, with briskly reacting pupils

The patient also had neurological complaint of tingling numbness in soles.

Fundus examination of Both eyes was normal.

Color vision was normal in both eyes, red desaturation test was also normal.

As all the examination was normal, a pattern reversal VEP was performed which showed grossly delayed latency in both eyes, though the amplitude was normal, it was asymmetrically reduced in right eye.

Multifocal ERG revealed bilateral grossly reduced P1 waveform amplitude in entire macular area.

2. Discussion

There is very little data on the early detection of drug induced optic neuropathy, with most articles focusing on drugs causing the neuropathy and reversibility of the same.

By the time the patient consults an ophthalmologist, optic disc pallor has already set in and vision is grossly reduced with abnormal color vision.

According to H. Fujiwara et al, the onset of symptomatic visual acuity reduction and color vision abnormality were regarded as the onset of visual impairment. (3)

Visual field examinations of such patients show central or cecocentral scotoma with preservation of peripheral fields which is characteristic. (4)

Also, it has also been found that Ethambutol induced optic neuropathy is not always reversible, and cases of irreversible optic disc damage has been reported especially in older populations. (5)

This case report further emphasizes the need for early identification of symptoms and diagnosis of drug induced optic neuropathy with prompt withdrawal of the drugs.

In a 2016 study of 31 patients taking ethambutol the mean P100 latency increased from 101 ms to 106.4 ms at 2 months and

115.4 ms at four months, these findings are similar to the findings of our patient. (6)

Hence it can be emphasized from this case report that VEP and ERG can be used efficiently for early diagnosis of drug related optic neuropathy even if clinical features are normal initially.

Timely and prompt withdrawal of the drugs leads to complete amelioration of symptoms within a week.

A high index of suspicion for optic neuropathy should be kept in mind while evaluating a patient on neurotoxic drugs.

Declaration of patient consent
The authors certify that they have obtained all appropriate patient consent forms.

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Nil

Conflicts of interest
There are no conflicts of interest

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