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OPTIC DISC SWELLING AS A WINDOW TO SYSTEMIC TOXICITY: A CASE OF LITHIUM INDUCED RAISED INTRA CRANIAL PRESSURE

Ophthalomology

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ABSTRACT

Lithium is well established treatment for bipolar disorder but may rarely cause toxic optic neuropathies such as disc edema. This case report discusses a young female patient presenting with bilateral optic disc edema without underlying intra cranial pathology or systemic disorder, ultimately attributed to lithium toxicity. The role of neuro-ophthalmology evaluation in early detection and multidisciplinary management is highlighted. Papilloedema or bilateral optic disc edema is often associated with raised intracranial pressure and typically promotes an extensive neurological workup. However, drug – induced optic nerve toxicity, though rare, must be considered. We present the case of 22 year old female with a history of bipolar disorder on lithium therapy, who reported blurred vision and headache for one month. Fundus evaluation revealed bilateral disc edema. MRI brain and orbit, CSF analysis and VEP were within normal limits, ruling out common neurological causes. A detailed medical history revealed long term lithium use, leading to the diagnosis of lithium induced papilloedema. The condition improved after discontinuing the drug under psychiatric supervision. This case highlights that carful and focused history taking, along with targeted clinical evaluation can help avoid over investigations, reduced patients anxiety and lead to timely management and accurate diagnosis.

KEYWORDS

Lithium, Bilateral Disc Edema, OCT, VEP, Perimetry.

INTRODUCTION:

The eye, being an extension of the central nervous system, often present with signs of systemic or neurological disorders. Papilloedema is – bilateral optic disc swelling is most frequently caused by increased intra cranial pressure. However toxic optic neuropathies from drugs like lithium can mimic similar clinical presentation.

Lithium carbonate, a widely used mood stabilizer in management of mood disorders has been reported to cause rare ophthalmic side effects, including optic nerve dysfunction. (1)

Case Report:

A 22 year old female student came with complaints of persistent headache and blurred vision in both eyes for 1 month. She had known history of bipolar disorder and was on lithium therapy for the same.

Our initial examination, her best corrected visual acuity was 6/6p in both the eyes; and anterior segment of both eyes were within normal limits. Intra ocular pressure was 10mmHg in both eyes. Fundus examination showed bilateral hyperemic disc edema. So patient was advised for Optical Coherence Tomography and Disc imaging which was showing bilateral disc edema.(Figure 1)

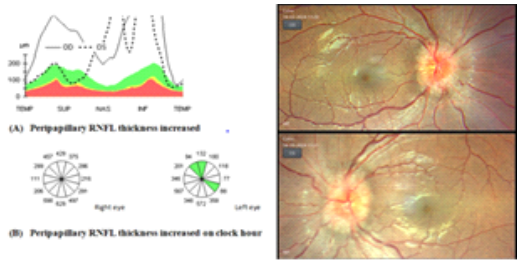

Figure 1 (A) Bilateral Disc edema (B) Peripapillary RNFL: Bilateral disc edema (C) Disc Imaging: Bilateral Disc edema

Blood investigations and CSF analysis were within normal limits with 13cm H2O opening pressure and MRI brain and orbit showed no signs of intra cranial mass lesions, demyelinating lesions and enlargement of ventricles.VEP showed normal amplitude and latency. Perimetry central 30-2 threshold test was within normal limits. Family history was positive for hypertension (father) and epilepsy (mother). Her medication for bipolar disorder was Lithium carbonate (600mg/day) and based on clinical findings, a provisional diagnosis of papilloedema due to Intra cranial hypertension was made. Lithium discontinued under psychiatric guidance and replaced with Quetiapine (50mg/day). 4 weeks after discontinue of lithium her headache as well as disc edema reduced. Her best corrected visual acuity remains RE 6/9 and LE 6/6. Optical coherence tomography and disc imaging showing is showing reduction of edema. (Figure 2)

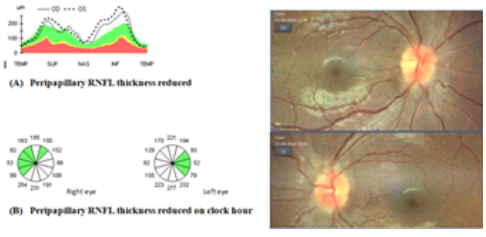

Figure 2(A) Bilateral disc edema resolving stage (B) Peripapillary RNFL thickness reduced (C) Disc Imaging: resolved edema

DISCUSSION:

Papilloedema or bilateral disc edema atypically suggestive of raised intra cranial pressure and often promotes urgent neuro imaging and lumber puncture to rule of life threatening causes such as intra cranial mass lesions or idiopathic intra cranial hypertension(IIH). However when imagining and cerebral spinal fluid findings are normal , clinician must consider less common etiologies, including drug induced optic neuropathies. Although lithium has long been regarded as a gold standard in the treatment of bipolar disorder, its use in the treatment of bipolar disorder, it has been declined in recent years due to the availability of newer , safe mood stabilizer and atypical antipsychotics such as Valproate, Iamtrigine , Quetiapine and Olanzapine.[3]

IIH is not commonly recognized side effect of lithium despite several case reported in the literature. Some literature also suggests doing regular fundus examination of patients who received lithium as treatment. Lithium causing IIH is not totally recognized but few theories are there into literature. [4 , 5 ,6] as lithium disrupt sodium –potassium pump leads to water retention in which leads to disc edema. [6]

This case severs as a reminder that thorough history taking remains one of the most valuable tools in clinical diagnosis. As all the investigations came normal and after stopping lithium, with in 1 month uneventful recovery happened.

Visual disturbance occurs in papilloedema in very advance stage and prognosis is poor but here in our case visual acuity was not impaired.

Other most important sign is headache for our diagnosis to lean towards IIH. Toxic neuropathies don't have optic disc swelling unlike some drugs like methanol and amiodaron can cause optic neuropathy with disc edema. [2]

CONCLUSION:

In any case, physician should be aware of this rare side effect of lithium and ophthalmologist should be evaluating fundus after knowing patient is on lithium. Lithium should be kept in mind before labeling a patient of papilloedema as IIH. So this can help to avoid unnecessary investigations and leads to timely diagnosis and management.

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