ORIGINAL RESEARCH PAPER
Volume - 12 | Issue - 09 | September - 2023 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

A CASE REPORT OF BILATERAL OPTIC NEURITIS – CHEMOTHERAPY INDUCED (TREATMENT A CHALLENGE?!)

Oncology

Dr. Manjunath Nandennavar Professor Of Medical Oncology Department, VIMS & RC, Bangalore.

Dr. Shashidhar V Karpurmath HOD And Professor Of Medical Oncology Department, VIMS &RC, Bangalore.

Dr Pooja D* Senior Resident In Dept Of Medical Oncology, VIMS&RC, Bangalore. *Corresponding Author

KEYWORDS

INTRODUCTION

The incidence of cytotoxic chemotherapy-related ocular toxicity is on the rise with the advent of newer agents and more aggressive combination regimens.

The quality of life of the patient is further compromised due to poor vision in such cases. We report a case of presumed chemotherapy-induced optic neuropathy associated with the use of vincristine and methotrexate for diffuse large b cell lymphoma (DLBCL)

CASE REPORT

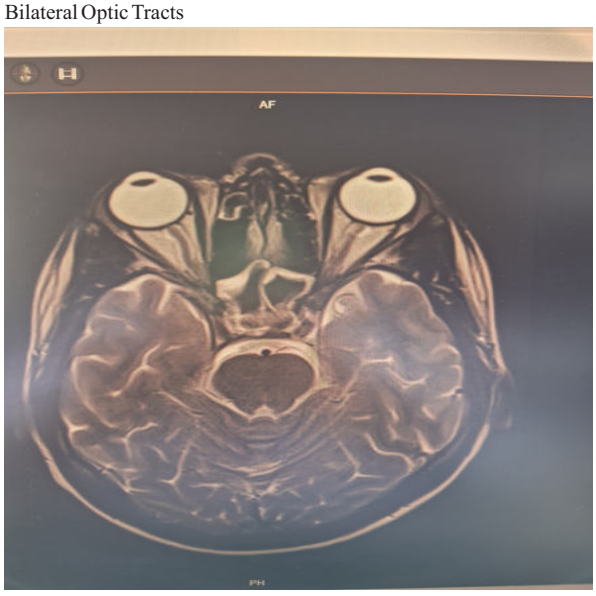
A 19 year old boy presented with complaints of cough and breathlessness since 1 month. On examination vitals; pulse – 92, bp – 110/80, spo2 – 96 and ros was normal. Imaging was done on which showed anterior mediastinal mass and lesion in the left upper pole of the kidney. Biopsy was done and suggestive of Diffuse large B CELL Lymphoma .

Following which he was started on chemotherapy under LMB 96 protocol. He received pre-phase COP and 2 Induction cycles of R COPADM. After which he presented within 4 days with pain in right eye. Following which OPTHAL EXAMINATION revealed –

VISUAL ACUITY –	RIGHT EYE	LEFT EYE
	6/6	6/6

FUNDUS EXAMINATION – NORMAL

Then MRI brain was suggestive of optic neuritis .
Magnetic Resonance Imaging (MRI) Showed Hyperintensity In Bilateral Optic Tracts



Serum MOG antibodies – were negative .
THE PATIENT WAS MANAGED WITH CORTICOSTEROIDS - INJ METHYL PREDNISOLONE 1 GM FOR 3 DAYS

Patient symptomatically improved and we proceeded with to continue with consolidation CYM Post Chemo it was uneventful.

Patient is on tapering dose of steroids and is not having any complaints. Patient has completed chemo and is in remission.

DISCUSSION

OPTIC NEURITIS is associated with moderate to severe vision loss, color vision loss, and pain with eye movement. Optic neuritis that is due to ischemia, however, may be nonpainful. Examination of the optic nerve head can sometimes show either optic disc swelling, if it involves the anterior portion of the optic nerve, or no swelling, if it involves the posterior portions. An MRI with contrast and dedicated orbital cuts can help with diagnosis. Patients may have an afferent pupillary defect if one optic nerve is involved more than the other.

Vincristine Induced

Vincristine is a mitotic inhibitor used to manage various pediatric tumors. Peripheral neuropathy is a well-known side effect of vincristine, and cranial nerve palsy is also seen occasionally. Other neurologic side effects are uncommon, with optic neuropathy being a particularly rare complication. Herein, we report a case of bilateral acute optic neuropathy in a male adolescent patient. We speculate that vincristine treatment is the underlying cause of the optic neuropathy.
3 doses of vincristine was given over a span of 4-6 weeks; so we hypothesize that chronic accumulation of the drug triggered the toxicity.

Methotrexate

If Methotrexate is injected by intrathecal route; optic neuropathy and internuclear opthalmoplegia can develop.

Optic neuropathy is a rare complication of vincristine use, with only a few cases reported. Norton and Stockman reported two pediatric patients who developed unilateral optic neuropathy approximately 1 week after being treated with vincristine. In that report, unlike our patient, both children were affected unilaterally and complained of pain; also, visual acuity improved after discontinuation of vincristine. Shurin et al reported bilateral optic atrophy in a 15-year-old girl that developed after 5 doses of weekly vincristine for management of medulloblastoma. Her vision improved after discontinuation of vincristine; however, optic disc pallor developed. Teichmann and Dabbagh reported severe bilateral optic neuropathy in a patient treated with vincristine for low-grade spinal cord astrocytoma. Weisfeld-Adams et al reported another case of optic neuropathy associated with vincristine: A 6-year-old boy presented with retro-orbital pain and rapid loss of vision 3 weeks after completing the sixth cycle of vincristine. There was no significant recovery of vision despite discontinuation of vincristine and administration of intravenous methyl-prednisolone, and fundoscopic examination revealed bilateral optic atrophy.

CONCLUSION

Optic neuritis is rare adverse event of chemotherapy. However, this diagnosis should still be considered when they present with visual loss while receiving systemic chemotherapy. Visual acuity should be

monitored when patient is on chemotherapy and any deterioration should alert the attending physician the possibilities of optic neuritis.

In the setting of ocular toxicity , the continuation or discontinuation of particular chemotherapeutic agent should be individualised.

REFERENCES

[1] Albert DM, Wong VG, Henderson ES. Ocular complications of vincristine therapy. Arch Ophthalmol (Chicago, Ill: 1960) 1967;78:709–13. [PubMed] [Google Scholar]
[2] Alexander P. Radiation-imitating chemicals. Sci Am 1960;202:99–108. [PubMed] [Google Scholar]
[3] Jain P, Gulati S, Seth R, et al.. Vincristine-induced neuropathy in childhood ALL (acute lymphoblastic leukemia) survivors: prevalence and electrophysiological characteristics. J Child Neurol 2014;29:932–7. [PubMed] [Google Scholar]
[4] Purser MJ, Johnston DL, McMillan HJ. Chemotherapy-induced peripheral neuropathy among paediatric oncology patients. Can J Neurol Sci 2014;41:442–7. [PubMed] [Google Scholar]
[5] Sandler SG, Tobin W, Henderson ES. Vincristine-induced neuropathy. A clinical study of fifty leukemic patients. Neurology 1969;19:367–74. [PubMed] [Google Scholar]
[6] Coccia PF, Altman J, Bhatia S, et al.. Adolescent and young adult oncology. Clinical practice guidelines in oncology. J Natl Compr Cancer Netw 2012;10:1112–50. [PubMed] [Google Scholar]
[7] Stryckmans PA, Lurie PM, Manaster J, et al.. Mode of action of chemotherapy in vivo on human acute leukemia--II. Vincristine. Eur J Cancer 1973;9:613–20. [PubMed] [Google Scholar]
[8] Merimsky O, Loewenstein A, Chaitchik S. Cortical blindness: a catastrophic side effect of vincristine. Anticancer Drugs 1992;3:371–3. [PubMed] [Google Scholar]
[9] Norton SW, Stockman JA, 3rd. Unilateral optic neuropathy following vincristine chemotherapy. J Pediatr Ophthalmol Strab 1979;16:190–3. [PubMed] [Google Scholar]
[10] Shurin SB, Rekate HL, Annable W. Optic atrophy induced by vincristine. Pediatrics 1982;70:288–91. [PubMed] [Google Scholar]
[11] Teichmann KD, Dabbagh N. Severe visual loss after a single dose of vincristine in a patient with spinal cord astrocytoma. J Ocular Pharmacol 1988;4:117–21. [PubMed] [Google Scholar]
[12] Weisfeld-Adams JD, Dutton GN, Murphy DM. Vincristine sulfate as a possible cause of optic neuropathy. Pediatr Blood Cancer 2007;48:238–40. [PubMed] [Google Scholar]