

# Bilateral Optic Neuritis in a Child with Typhoid Fever – A Rare Case Report

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## ABSTRACT

**Introduction:** Post Typhoid Immune mediated Bilateral optic neuritis is a rare sequelae that requires a high index of suspicion by an ophthalmologist and early institution of appropriate treatment.

**Case report:** A 5 year old child diagnosed with Typhoid fever for 3 weeks was admitted in department of Pediatrics & presented to us with sudden painless loss of vision in both eyes for 2days. PL was denied in both eyes. Fundus examination showed blurring of disc margin, oedema and hyperemia of disc both eyes with optic disc hemorrhage in right eye. She was started on steroid therapy following which marked improvement in BCVA in both eyes was seen.

**Conclusion:** Post Typhoid Immune mediated optic neuritis requires early diagnosis and steroid therapy that help in improvement of symptoms and prevention of visual loss.

**Keywords:** Bilateral Optic Neuritis, Post Typhoid, Steroid

margin with hyperemia and disc oedema were seen (shown in figure 1)

**Laboratory tests** –Total leucocyte count was 22,100( $N_{87}, L_{11}, M_1, E_1, B_0$ ) with ESR 50mm AEFH. Blood sugar, Liver function test, VDRL, Mantoux Test, urine examination, Chest X-ray were not significant.

MRI Brain with Orbit showed no significant abnormality.



**Figure-1:** Fundus photograph of the right and left eye.

## INTRODUCTION

Typhoid fever caused by salmonella typhi is notorious for affecting the intestine, heart and joints. It rarely affects the eye. Involvement of eye may be due to direct invasion or immune mediated phenomenon.<sup>1</sup> Posterior segment involvement can be seen in form of retinitis, optic disc involvement and subsequent macular involvement.<sup>2</sup> Complications are usually seen after the third week which is called as the “Week of Complications”.

We present a case of Bilateral Optic neuritis in a 5 year old child diagnosed with typhoid fever for 3 weeks treated successfully with steroid therapy.

## CASE REPORT

A 5 year old female child diagnosed with Typhoid fever for 3 weeks was admitted in Department of Pediatrics in Assam Medical College & Hospital, Dibrugarh (treated elsewhere first) and presented to us with sudden painless loss of vision in both eyes for 2 days. Her Widal test showed significant titre for ‘O’ (1:320) and ‘H’ (1:320) antigen and she was treated with Inj. Ceftriaxone for fever.

**On examination** – The child was of average built. PL was denied in both eyes. Pupils were round, mid-dilated and non reacting to light in both eyes. Anterior segment was within normal limit.

**Dilated Fundus Examination** – Right eye: Mild blurring of disc margin, disc oedema, hyperemia and optic disc hemorrhages were seen. Left eye – Mild blurring of disc

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**Treatment** – She was treated with Injection Methylprednisolone 25mg/kg/day iv for 3 days followed by oral steroid at a dose of 1mg/kg/day tapered over 4 weeks (after consultation with paediatrician). On Day 4, her BCVA was 3/60 which improved to 6/60 in both eyes after 2 weeks. Also, her Widal titre reduced below significant level after 2 weeks. Patient was on regular follow-up and her BCVA was 6/24 after 1month after which patient was lost to follow-up.

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## DISCUSSION

Ocular manifestations following typhoid fever typically occur 3-4 weeks after onset of the disease. Considering the timing of onset, high Widal titres at presentation and significant improvement following steroid therapy confirms the diagnosis of Post-typhoid immune mediated Bilateral optic neuritis in our patient.

Pathogenesis of immune-mediated vasculitis could be attributed to post infectious immunologic effects which may lead to an immune response that reacts to self-antigens or homology between retinal antigens and microbial peptides (similarity between S antigen and microbial peptides like yeasts, Escherichia coli, and hepatitis B virus) or molecular mimicry leading to autoimmunity (S antigen and interphotoreceptor retinoid binding protein - IRBP).<sup>3</sup>

Similar case reports by Relhan et al.<sup>1</sup> and Laul et al.<sup>4</sup> showed immune mediated response post typhoid fever presenting with neuroretinitis, vasculitis and macular detachment. Successful treatment with steroids was seen in them.

Management of such pathology remains controversial due to lack of published literature. Spontaneous resolution is possible. Cases if mild, can resolve without treatment while severe cases may need systemic steroid therapy. Since, ours was a case of severe bilateral optic neuritis (PL denied in both eyes), we gave iv methylprednisolone for 3 days followed oral steroid.

## CONCLUSION

In conclusion, though rare, one can encounter such cases of Post typhoid immune mediated severe bilateral optic neuritis in child that can be managed successfully with systemic steroid therapy.

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