Al Ameen J Med Sci 2015; 8(2):164-167 ● US National Library of Medicine enlisted journal ● ISSN 0974-1143

SHORT COMMUNICATION CODEN: AAJMBG

Spontaneous resolution of severe neuroretinitis following a febrile illness

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Abstract: *Background:* Neuroretinitis represents a self-limiting, benign, systemic inflammatory process with rarely a specific etiology being identified, yet steroids are used in treatment. *Aims:* To report a case series of adolescents suffering from bilateral neuroretinitis following a febrile illness with spontaneous resolution without steroids therapy. *Method:* Here in we report a series of five patients who presented with diminision of vision (counting fingers) in both eyes 3-4 weeks following a febrile illness characterized by optic disc swelling, and macular star exudates. *Results:* Visual acuity resolved spontaneously to 20/40 or better without steroid therapy over a period varying between 3 months to 18months. *Conclusion:* This study represents a retrospective review of group of patients with good visual recovery without steroid treatment and also highlights observation combined with patient councelling remains an appropriate option for neuroretinitis following febrile illness.
Keywords: Neuroretinitis, Steroids in optic neuritis, febrile illness.

Introduction

Neuroretinitis (NR) is a rare clinical entity, usually a self-limited disorder with a good visual prognosis. Treatment of neuroretinitis is required only when there is an underlying infectious or inflammatory condition. The most common cause of NR is cat-scratch disease, accounting for two thirds of cases [1-2]. Additional causes vary and include toxoplasmosis [3-4], leptospirosis [5], mumps [6], herpes simplex virus [7], salmonella [8], tuberculosis [9], Lyme disease [10] and syphilis [11].

Despite thorough evaluation, approximately one quarter of cases remain idiopathic [2]. Although the causes are varied, most patients with NR tend to share a similar clinical profile. Treatment of neuroretinitis depends on whether there is an underlying infectious or inflammatory condition that requires therapy. No treatment is required in the idiopathic group as the disease is self-limiting [12].

Though systemic steroids have been tried, there is no definite evidence that such treatment alters either the speed of recovery or the ultimate outcome. The prognosis in most cases of idiopathic neuroretinitis is excellent as it is self limiting [13].

Material and Methods

We identified five patients with neuroretinitis who were treated with medical history of febrile illness in past six months, about which adequate follow-up information was unavailable. Patients were referred to our center for consultation only. In all five patients, a complete medical history was obtained, and a neuro-ophthalmic examination was performed.

All patients underwent examinations to determine complete blood cell count, erythrocyte sedimentation rate and chest radiography. We recorded the onset and duration of ocular symptoms and the date of consultation. In this retrospective case series all patients presented with abrupt painless diminision of vision (counting fingers) in both eyes 3-6 weeks following a febrile illness.

All cases underwent detailed evaluation of anterior and posterior segment of the eye which included recording the best corrected visual acuity (Snellens chart), slit lamp examination of the anterior and posterior segment (90D), applanation tonometry, fundus photography and fluorescein angiography (when & where required).

All patients underwent repeat evaluation at 2 weekly intervals or more depending on the disease severity, till complete resolution of the disease (upto 18 months) was observed. All patients were given oral multivitamins and minerals along with topical flurbiprofen eye drops. None received systemic steroids. The visual and anatomic outcome was recorded serially during the entire period of follow up till complete 18 months.

Results

Patients age was between 18-30 years. No patient was found to have any systemic or ocular disease that might cause the neuro-ophthalmic findings at the time they were referred. Results of laboratory testing were normal. Both pupils were normal in size but reacted slowly to light. Fundus examination showed optic disc edema and macular star formation and the diagnosis of neuroretinitis was made.

A repeated ophthalmologic evaluation performed at 2 weekly interval showed improvement of visual acuity. After 3-6 months the visual acuity was 20/40 to 20/20 in majority of them. There was, however, residual pallor of both optic discs at 18 months follow up though resolution of symptoms and visual improvement was present.

Though duration was variable, the visual improvement was present in all cases without steroid therapy. All patients were given oral multivitamins and mineral along with topical flurbiprofen eye drops. The visual and anatomic outcome was recorded serially during the entire period of follow up. We have also followed up patients with neuroretinitis receiving oral steroids but it seemed to have no difference in visual recovery between the both. However, this data is not compared in the present study.

Table-1: Results of patient follow up

	Case 1	Case 2	Case 3	Case 4	Case 5
Time for complete resolution (in months)	4-6months	10-12months	8-9months	10-11months	7-10months
Visual acuity (Snellens)	20/20	20/40	20/30	20/40	20/20

Discussion

Optic neuritis is a rare neurologic complication following infectious conditions or a fibrile illness and is manifested clinically by decreased visual acuity, decreased color perception, and visual field defects. Funduscopic examination may show marked edema of the head of the optic nerve (papillitis) and retina (neuroretinitis, NR) or an entirely normal appearance (retrobulbar neuritis). Papillitis is characterized by hyperemia of the optic disc, with edema. The nerve fiber layer of the retina is involved in neuroretinitis [1].

Visual loss is the predominant clinical manifestation. At present, no therapy has been shown to improve long-term visual outcome in typical ON. Corticosteroids shorten the duration of the attack, but the consensus of several studies and a meta-analysis is that they do not appear to change the long-term outcome [14-19]. Steroids have a risk of side effects, even if used short-term, including mood change, weight gain, insomnia, pancreatitis, avascular osteonecrosis, and psychosis [20].

In the UK, corticosteroids tend to be reserved for patients with atypical features, coincident problems in the fellow eye, if pain is particularly severe, or at the patient's request, although practice varies in different countries. Treatment of NR either oral or intravenous corticosteroids has not appeared to alter the visual prognosis of this condition, as it is an autoimmune disorder that involves occlusive vasculitis affecting the optic disc [21-23].

A randomized controlled trial of intravenous methyprednisolone followed by oral prednisone in acute optic neuritis in the adult population in India showed quicker recovery from visual loss and better vision at 6 months was reported [24] but the role of corticosteroids is controversial and so inadvertent use of steroids should be reconsidered. However, it is unclear whether corticosteroids affect the natural history of the disease in children, and this merits further investigation [25].

Adverse drug reactions and other iatrogenic complications can be reduced by limiting antibiotic use in settings where a meaningful treatment benefit has not been established. There is a paucity of literature regarding the exact pathophysiology as well as guidelines for appropriate management. Hence various modalities of treatment ranging from oral steroids and antiviral agents, aspirin, intravitreal avastin have been tried empirically with limited success and without definitively proven efficacy. Although regarded as a benign infectious disease, physicians should be aware of optic neuritis as a potentially serious ocular complication. This study is to focus on the matter that resolution of neuroretinitis with a potentially good vision is possible without any steroid therapy.

Conclusion

Good spontaneous recovery is possible in post febrile neuroretinitis with conservative treatment. This gives an insight into the natural history of neuroretinitis which occurs following a febrile illness. In various studies although treatments with systemic steroids have been attempted, there is no definite evidence that such treatment alters either the speed of recovery or the ultimate outcome.

This study represents a retrospective review of group of patients with good visual recovery without steroid treatment and also highlights observation combined with patient councelling remains an appropriate option for neuroretinitis following febrile illness. Although regarded as a benign infectious disease, physicians should be aware of optic neuritis as a potentially serious ocular complication.

References

1. Reed JB, Scales DK, Wong MT, Lattuada CP, JrDolan MJ, Schwab IR. Bartonella henselae neuroretinitis in cat scratch disease: diagnosis, management, and sequelae. *Ophthalmology.* 1998; 105:459-66.
2. Suhler EB, Lauer AK, Rosenbaum JT. Prevalence of serologic evidence of cat scratch disease in patients with neuroretinitis. *Ophthalmology.* 2000; 107:871-76.
3. Folk JC, Lobes LA. Presumed toxoplasmic papillitis. *Ophthalmology.* 1984; 91:64-7.
4. Fish RH, Hoskins JC, Kline LB. Toxoplasmosis neuroretinitis. *Ophthalmology.* 1993; 100:1177- 82.
5. Dreyer RF, Hopen G, Gass JD, Smith JL. Leber's idiopathic stellate neuroretinitis. *Arch Ophthalmol.* 1984; 102:1140-45.
6. Foster RE, Lowder CY, Meisler DM, Kosmorsky GS. Baetz-Greenwalt B Mumps neuroretinitis in an adolescent. *Am J Ophthalmol.* 1990; 110:91-3.
7. Johnson BL, Wisotzkey HM. Neuroretinitis associated with herpes simplex encephalitis in an adult. *Am J Ophthalmol.* 1977; 83:481-89.
8. Fusco R, Magli A, Guacci P. Stellate maculopathy due to salmonella typhi: a case report. *Ophthalmologica.* 1986; 192:154-8.
9. Duke-Elder S, Dobree JH. Diseases of the retina. In: Duke-Elder Sed. System of Ophthalmology. 10 St Louis, *Mo CV Mosby Co* 1967; 246-8.
10. Lesser RL, Kornmehl EW, Pachner NR et al. Neuro-ophthalmologic manifestations of Lyme disease. *Ophthalmology.* 1990; 97:699-706.
11. Folk JC, Weingeist TA, Corbett JJ, Lobes LA, Watzke RC. Syphilitic neuroretinitis. *Am J Ophthalmol.* 1983; 95:480-6.
12. Carithers HA. Cat-scratch disease. An overview based on a study of 1200 patients. *American Journal of Diseases of Children,* 1985; 139:1124.
13. Dreyer RF, Hopen G, Gass JDM and Smith JL. Leber's idiopathic stellate neuroretinits. *Archives of Ophthalmology,* 1984; 102:1140-5.
14. Beck RW, Cleary PA, Anderson MM Jr, et al. A randomized, controlled trial of corticosteroids in the treatment of acute optic neuritis. The Optic Neuritis Study Group. *N Engl J Med.* 1992; 326:581-8.
15. Beck RW, Cleary PA. Optic neuritis treatment trial. One-year follow-up results. *Arch Ophthalmol.* 1993; 111:773-5.
16. Kapoor R, Miller DH, Jones SJ et al. Effects of intravenous methylprednisolone on outcome in MRI-based prognostic subgroups in acute optic neuritis. *Neurology,* 1998; 50:230-7.
17. Wakakura M, Mashimo K, Oono S et al. Multicenter clinical trial for evaluating methylprednisolone pulse treatment of idiopathic optic neuritis in Japan. Optic Neuritis Treatment Trial Multicenter Cooperative Research Group (ONMRG). *Jpn J Ophthalmol,* 1999; 43:133-8.

18. Brusaferri F, Candelise L. Steroids for multiple sclerosis and optic neuritis: a meta-analysis of randomized controlled clinical trials. *J Neurol.* 2000; 247:435-2.
19. Vedula SS, Brodney-Folse S, Gal RL, Beck R. Corticosteroids for treating optic neuritis. *Cochrane Database Syst Rev.* 2007; 1:CD001430.
20. Purvin VA, Chioran G. Recurrent neuroretinitis. *Arch Ophthalmol.* 1994; 112:365-1.
21. Purvin VA, Ranson N, Kawasaki A. Idiopathic Recurrent Neuroretinitis Effects of Long-term Immunosuppression. *Arch Ophthalmol.* 2003; 121:65-7.
22. de Amorin Garcia et al. Bilateral stellar neuroretinitis in a patient with dengue fever. *Eye* 2006; 20:1382.
23. Murthy KR, Nandita V. Bilateral retinitis following chikungunya fever. *Indian J Ophthalmol* 2008; 56:329-31.
24. Beck RW, Cleary PA, Anderson Jr MM et al. A randomized controlled trial of corticosteroids and the treatment of acuteoptic neuritis. *N Engl J Med.* 1992; 326:581-88.
25. Shetty T. Corticosteroids and optic neuritis [letter]. *Neurology.*1993; 43:632.

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