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Case Report

OCULAR BARTONELLOSIS: A CASE SERIES

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ABSTRACT

We report a case series of 5 patients diagnosed as Ocular Bartonellosis (OB) with confirmed serologic evidence. Three had history of contact with cats. All patients presented with a decreased vision ranging from 6/9 to hand movement (HM). Three of the patients had unilateral neuroretinitis and two had bilateral involvement. Of the five, one presented with bilateral intermediate uveitis. All patients had sub retinal fluid (SRF) confirmed by optical coherence tomography (OCT) which resolved with treatment. All patients were treated with antibiotics. One received intravenous (IV) followed by oral corticosteroid, three received oral corticosteroid and one had topical corticosteroid only. All patients had significant improvement of visual acuity between 6/6 to 6/18.

INTRODUCTION

Ocular Bartonellosis is an entity of Cat-scratch disease (CSD) which is known to be caused by gram negative bacteria, *Bartonella henselae*. It is a clinical diagnosis supported by serological evidence, which may have various presentations [1]. The commonest presentation of OB is neuroretinitis defined by the presence of exudative optic disc swelling with macula star while the less common presentation is intermediate uveitis [2,3,4].

Case 1

A 45 year old lady with diabetes mellitus, presented to a private center with left blurring of vision of two days duration. Her best corrected visual acuity (BCVA) was 6/9 and 6/12 in the right and left eye respectively. She was diagnosed as a case of left optic neuritis and IV methylprednisolone was commenced. Three days following the treatment her left vision deteriorated to 6/24, hence IV methylprednisolone was stopped. Three weeks after the initial presentation, she presented to our center with reduced left vision, left optic disc swelling, Uub-retinal fluid and macula star. Her BCVA was 6/60. Examination of the right eye revealed no abnormal findings. Serology analysis showed positive titre for Bartonella hensalae. The IgG titres was 1:40,while IgM was weakly reactive. She was treated with oral ciprofloxacin, oral and topical corticosteroids for 6 weeks. Her vision improved to 6/18 by the end of treatment.

Case 2

A 47 year old Indian lady, with underlying hypertension presented with bilateral red eyes associated with blurring of vision for 1 week. There was no history of recent fever or upper respiratory tract infection (URTI). Both eyes had BCVA of 6/9, normal colour vision and relative afferent pupillary defect (RAPD) was negative. Right anterior segment examination revealed, anterior chamber reaction with keratic precipitates. There were vitritis and hyperemic optic disc on funduscopy. The left eye had posterior synechiea, iris pigments on lens, anterior chamber cells and anterior vitreous cells. The right optic disc was also hyperaemic. Optical Coherence Tomography showed right cystoid macula edema (CMO). Diagnosis of bilateral intermediate uveitis was made and topical corticosteroid was started. After one week, there was presence of right macula star, however there was no metamorphopsia and vision remained the same. Hence, a revised diagnosis of right OB was made and patient was prescribed oral ciprofloxacin for 6 weeks. Serology analysis for Bartonella hensalae showed negative IgM titre and positive IgG (titre >1:128). Bilateral BCVA improved to 6/6 at the completion of treatment.

Case 3
A 22 year old lady, presented with bilateral blurring of vision of one week duration, associated with fever and headache. Best Corrected Visual Acuity was 6/18 and 6/9 in the right and left eye respectively. Optic nerve function test was reduced bilaterally. There were bilateral optic disc swelling and right macular striae. The OCT reveal the presence of SRF (Figure 1). She was managed as bilateral optic neuritis with IV methylprednisolone for 5 days followed by oral prednisolone for 6 weeks. Her BCVA improved to 6/6 bilaterally even though optic disc remains hyperemic. Serology analysis for bartonella hensalae confirmed positive Ig M (titre1:24) and positive Ig G (titre 1:128) a month after presentation for which oral azithromycin was started. Despite the commencement of antibiotics, bilateral macula star developed (Figure 1C). Resolution of the clinical signs was seen after 2 months (Figure 1D).

Case 4
A 52 year old lady, with underlying diabetes mellitus presented with right blurring of vision associated with pain of 2 weeks duration. There were no prodromal symptoms. Best corrected visual acuity was 6/120 in the right eye and 6/7.5 in the left eye. The right eye had impaired optic nerve function with swollen optic disc, severe non proliferative diabetic retinopathy (NPDR) and macula edema. The presence of SRF in the right eye was seen on OCT. Left eye had severe NPDR. She was initially diagnosed to have right non-arteritic ischemic optic neuropathy (NAION). However, after 10 days she developed right macula star. A revised diagnosis of right OB was made supported by a positive Ig G serology result (titre >1:128). Oral doxycycline was given for 6 weeks and her BCVA improved to 6/12 by the end of the treatment.

Case 5
A 58 year old Malay lady, with underlying hypertension presented with redness of the left eye associated with blurring of vision of 3 days. There was no history of recent fever, URTI, or trauma. She had cats at home. Her visual acuity was 6/12 in the right eye and HM in the left eye. The abnormal findings was confined to the left eye . She had impaired optic nerve function, optic disc swelling with macula star and SRF on OCT. Serology analysis showed Ig M (titre <1:12) and IgG of titre >1:64. She was treated with oral doxycycline and Ciprofloxacin as well as oral prednisolone for 6 weeks. Vision improved to 6/9 in the left eye by end of treatment.

DISCUSSION

The main reservoirs for Bartonella spp are cats, while the main vector of Cat Scratch Disease is the flea Ctenocephalides felis [5]. A history of exposure to cats commonly present in more than 50% of reported cases of bartonellosis. From a Malaysian study, about 25% of patients had history of contact with cats [6]. It is believed that even though history of cat exposure is a known risk factor, it is not a prerequisite to make the diagnosis [7].

Ocular Bartonellosis is one of the sprectrum of the clinical presentation of CSD. The commonest presentation of OB is neuroretinitis which is usually unilateral but bilateral presentation has been reported [8]. Other signs include focal retinochoroiditis, optic disc swelling, retinal infiltrates [8]. The disease has an evolutionary progress where certain signs such as macula star may appear much later after optic disc swelling as seen in case 1 to 4. This has lead to a misdiagnosis of optic neuritis where the initiation of high dose corticosteroid without antibiotics had worsened the vision as seen in case 1. Currently there

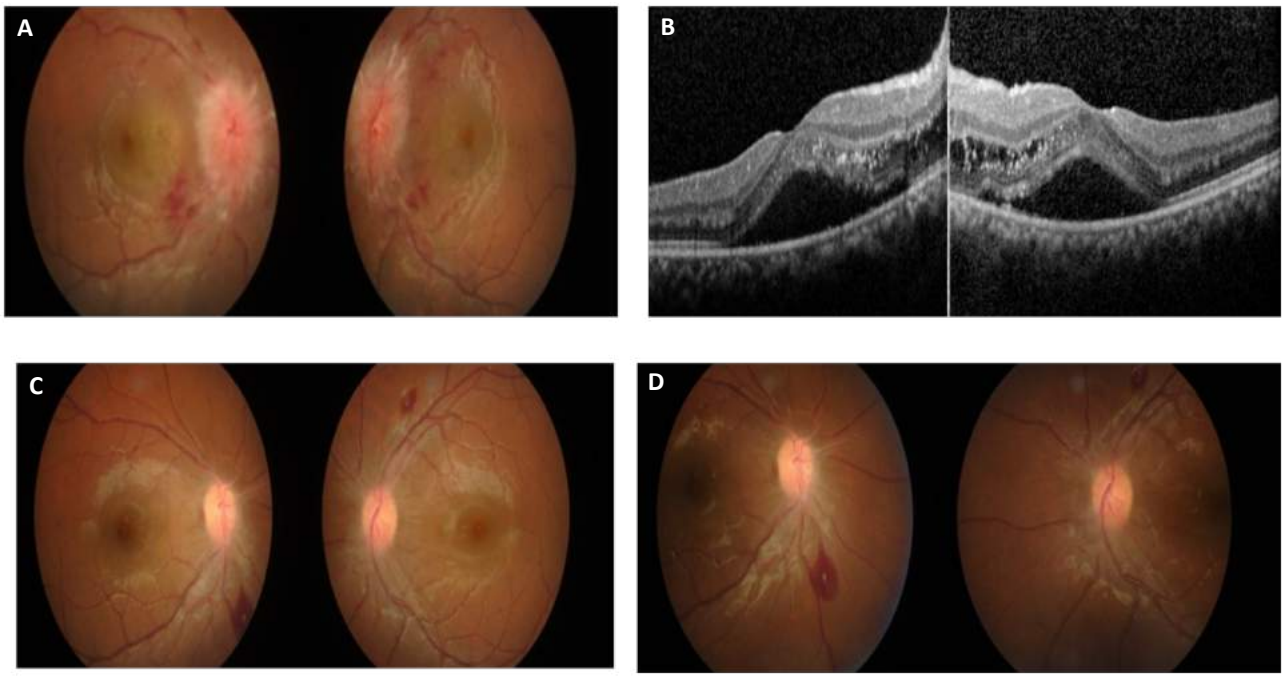

Figure 1: Evolution of OB showing A) Bilateral optic swelling ,B) Bilateral subretinal fluid from OCT, C) Bilateral macula star appearing after 1 month, D) resolution of signs after 2 months.

Table 1: Summary of the cases showing visual acuity pre and post treatment, laterality and types of treatment given.

		Case 1	Case 2	Case 3	Case 4	Case 5
Age (years)		45	47	22	52	58
VA (OD,OS)	Pre-treatment	6/9,6/60	6/9,6/9	6/18,6/9	6/120,6/7.5	6/12,HM
	Post-treatment	6/6,6/18	6/6/,6/6	6/6,6/6	6/12,6/12	6/12,6/9
Laterality		Unilateral	Bilateral	Bilateral	Unilateral	Unilateral
Treatment	Antibiotic	CB	CB	AZ	DX	DX,CP
	Steroid	OP	TS	MP,OP	OP	OP

**Azithromycin (AZ), Ciprofloxacin (CB), Doxycycline (DX), Oral prednisolone (OP), IV Methylprednisolone (MP), Topical steroid (TS)*

is no available local data on the seroprevalence of *Bartonella henselae* antibodies among the Malaysian population. Serologic test that supports the clinical diagnosis of OB in our setting are elevated levels of Ig M or Ig G for *Bartonella henselae* [9].

Ocular Bartonellosis is a self-limiting disease in immunocompetent individuals however early antibiotic treatment have shown to hasten recovery with a good visual prognosis. Bass et al reported that the average period of illness was 2.8 weeks in treatment group, compared to non treatment group [10]. Rifampicin, gentamicin, cotrimoxazole, ciprofloxacin, and doxycycline have shown efficacy in the treatment of OB [11]. Dual antibiotic treatment was given in case 5 in view of the poor vision. Corticosteroid improves intraocular inflammation and optic neuropathy especially in those with poorer vision. Intravenous methylprenisolon was given in Case 3 in view of bilateral optic disc swelling.

CONCLUSION

Although OB is a self-limiting disease, antibiotic still remains as the principle treatment. Corticosteroids therapy should be considered based on individual case especially in atypical presentation.

DECLARATION OF INTEREST

Authors have no conflict of interest in this article.

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