Sir,

Papillophlebitis and uveitis as a manifestation of post-streptococcal uveitis syndrome

β-Haemolytic streptococci are responsible for a number of immune-mediated systemic complications, which most commonly appear 7–35 days post infection.[1] They cause rheumatic fever in 0.7–1.4% of cases, glomerulonephritis in 0.2–3.4%, erythema nodosum, and reactive arthritis.[1] Over the last 15 years, a number of case reports have described ocular inflammation occurring days to weeks after the onset of the streptococcal infection. In most cases, ocular signs were limited to the anterior segment, though posterior involvement was also seen. Topical treatment or a short course of systemic immunosuppression is all that is required in majority of cases.[2] We present herein a case of papillophlebitis and uveitis, which required systemic antiinflammatory agents as treatment. To gain a perspective on the ocular manifestations, which are associated with post-streptococcal uveitis syndrome (PSUS), all articles, which could be identified in PubMed under the heading 'uveitis AND streptococcus', and 'eye AND immune AND streptococc*' were reviewed in November 2006. Cited articles, not listed in PubMed were also reviewed.

Case report

A 6-year-old girl presented in the emergency room with a 3-week history of vision loss. Vision was 6/120 in both eyes, 4+ cells in the anterior chamber with multiple fine keratic precipitates. No synechiae were seen. The examining physician was unable to see details of the fundus. She was started on prednisolone drops every hour in both eyes. By the following day, the anterior chamber inflammation had decreased in severity to 3+ cells with one line improvement in vision. She was referred to the uveitis service. Clinical history included a sore throat 5 weeks before the onset of ocular symptoms, which the family practitioner diagnosed as tonsillitis, and for which she was empirically started on penicillin G. She had no symptoms of fever, rash, or joint pains; nor had she any prior episode of tonsillitis or of streptococcal skin infection. On examination, the anterior segment findings had further decreased with 2+ cells and flare present. The fundus examination revealed a 3+ haze in both eyes, dilated and tortuous veins, and prominence and hyperaemia of the optic nerve with indistinctness of its borders. Sheathing of venules was present in the temporal distal vasculature (Figure 1). A fluorescein angiogram confirmed the diagnosis of papillophlebitis in both eyes (Figure 2). Systemic investigations included negative antinuclear antibody , anti-extractable nuclear antigens , anti-cyclic citrullinated peptide , anti-double stranded DNA, rheumatoid factor , Lyme titre, and fluorescent treponemal antibody–absorption (FTA—ABS); a low C reactive protein at 14 mg/l, an erythrocyte sedimentation rate of 70 mm/h. The following serologic investigations were positive: antistreptolysin 1280 AE/ml (normal under 200), anti-DNAse 400 E/ml (normal <200 E per ml). Tonsillar cultures were positive for *Streptococcus pyogenes*.

She was given a 10-day course of oral penicillin G and started shortly thereafter on oral prednisone 30 mg

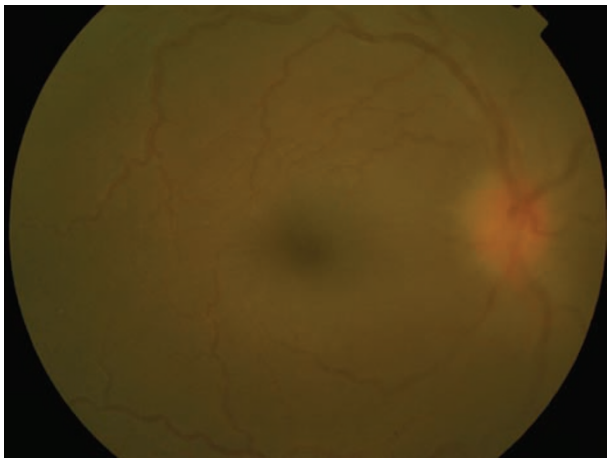

Figure 1 Fundus picture of the right eye. Fundus colour picture taken at the time of presentation. Significant vitreous haze is present. The retinal vasculature is tortuous, and the optic nerve is hyperaemic with clouding of its margin.

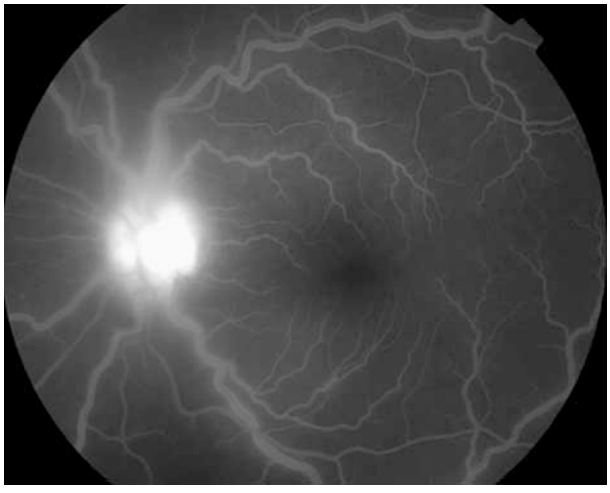

Figure 2 Midphase fluorescein angiogram of the left eye. This fluorescein angiogram shows marked leakage from the optic nerve and some early segmental perivascular staining.

followed by methotrexate 15 mg once a week when she was diagnosed with insulin-dependent diabetes about 2 weeks after initiating the prednisone treatment. On methotrexate, her vision recovered fully over a 3-month period, at which point, the medication was stopped. She has not had any recurrence in a follow-up period of 18 months.

Comment

Infections with β-haemolytic streptococcus are still commonly seen. Acute infection is characterized by impetigo or an upper respiratory infection (URI). Both forms, if not treated promptly, can lead to immune-mediated diseases starting 7–35 days later. The best characterized are rheumatic fever and

Table 1 Published cases of post-streptococcal uveitis with clinical manifestations

Source	*Gender*	*Age (months)*	*Follow-up*	*VA Initial 6/x*		*VA final 6/x*		*No.of recurrence #*	*Time to recurrence (months)*	*Manifestions*	
										Anterior segment	*Posterior segment*
Holland[2]	F	14		6	6	6	6	1	9	Ant uveitis	Normal
Kobayashi[3]	F	38	9						Ant uveitis	Normal	
	M	32	14			1		Ant uveitis	Normal		
Benjamin[4]	F	14	10	6	6	6	6	1	9	4+ C CH Hypopyon 3+C by recurrence	Normal
Ovchinsky[5]	F	3	36	12	12			Persistent		KP mod C	Mod C
Leiba *et al*[6]	F	5	10+	18	18	6	6	3	10	Conj flare	C sheathing
Cokingtin[7, a]	M	24	2	6	6	6	6			KP fine mod cell	Ant cell
Ortiz[8]	M	14	36	CF	CF	7.5	36			OH 60/50 fibrin AC	No view
Besada[9, b]	F	31	0.6	6	6	6	6			1+C	Normal
	F	33	16	9	7.5	6	6	2	12	3+C, KP MF CH	RPE detachment CME with recurrence
Caccavale[10]	F	21	2	12	9	6	6	0		Normal	C2+ ONHS
										Rec pan uveitis GL	Choroidal lesion
Wirostko[11]	F	10	29	24	24	7.5	6	1	27	3+C CH rec 2+C	Rec ONHH vit cells
Stem[12]	M	13	1	7.5	18	Improve				2+C CH	Thickened choroid US
Hall[13]	F	41	2							Scleral hyperremia	

Worst vision [a]6/60, 6/120.
Worst vision [b]6/21.
C = cell, CH = conjunctival hyperaemia; CME = cystoid macular edema; GL = glaucoma; KP = keratic precipitates; OH = ocular hypertension; ONHS = optic nerve head swelling; RPE = retinal pigment epithelium; VA = visual acuity.

glomerulonephritis. While both the URI and the skin infection can lead to glomerulonephritis, rheumatic fever is seen only after the URI infection. All reported cases of post-streptococcus uveitis, which could be identified through PubMed, manifested after an URI (Table 1). All were bilateral. When reported, ocular symptoms arose 2–4 weeks following the initial symptoms of pharyngitis.

Post-streptococcus uveitis can give rise to either anterior segment uveitis or involve the posterior pole. Anterior segment involvement is variably described as a mild nongranulomatous uveitis responsive to topical medication[2–6,9,13] or in more severe forms as granulomatous in nature.[9] Glaucoma has been observed in some cases, mainly in recurrent disease.[8] In the vitreous, mild anterior vitritis with inferior cell clumping is mostly described, though 3+ vitritis has also been observed.[5–7,11] Choroidal lesions with or without serous retinal detachment can occur in the form of patchy nummular lesions which upon resolution may result in RPE mottling.[9,10,12] Diffuse choroidal thickening and scleritis have also been reported.[8,13]

Optic nerve involvement is rarely reported. Disc hyperaemia is noted in two case reports,[11,12] while Caccavale reports on a swollen optic nerve with enlargement of the blind spot in a patient with choroidal manifestations.[10] Response to oral steroids was prompt and complete. In the present case, another immunomodulator was required due to the development of insulin-dependent diabetes associated with ketoacidosis. She completely responded to the addition of methotrexate, but her recovery required several months of therapy.

Although post-streptococcal syndromes are felt to be immune mediated, the exact mechanism remains unclear. Acute infection can lead to the production of cross reactive-tissue specific antibodies, pyrogenic exotoxins released by the organism are known to act as superantigens leading to nonspecific activation of CD4-positive T cells.[1] More specific activation by molecular mimicry is also known to occur.[14] In most cases, the acute infection will have subsided by the time the immune response appears. However, in some cases such as the present one, infection may be present concurrent to the immune response. In patients with a history of a recent pharyngitis, cultures should be obtained in addition to serology. If present, the infection should be treated with appropriate antibiotics—penicillin or erythromycin in allergic patients. In recurrent cases, prolonged prophylaxis may be required, but should be reserved to cases presenting with severe visual impairment.[2]

In conclusion, upper respiratory streptococcal infection can be associated with severe visual loss. It may present in a number of ways including papillitis with severe vision loss. Prompt recognition allows for the institution of appropriate therapy and complete vision recovery.

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MD de Smet[1,2]

[1]Division of vitreo-retinal surgery and uveitis, Department of Ophthalmology, Middelheim Hospital, Antwerp, Belgium
[2]Department of Ophthalmology, Academic Medical Center, University of Amsterdam, Amsterdam, The Netherlands
E-mail: mddesmet1@mac.com

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Sir,

Choose and Book audit in a secondary eye care unit

Choose and Book (C&B) is a national electronic booking service introduced in England since 2004.[1] An audit of C&B was performed at the West of England Eye Unit (WEEU) in Exeter over concerns of inappropriate referrals with this system. The total number of referrals received between 19th February 2007 and 15th May 2007 was 609. The total number of rejections during the same period was 148. We calculated an average number of 10.32 referrals and 2.49 rejections per working day. The most common reasons for rejections were: redirection of referral to another clinic (61%, mostly to cyst or minor operations clinics), necessity to book additional assessments for same visit (15%, including orthoptic and optometric assessments and glaucoma screening tests), and upgrading the priority of a referral from routine to urgent (14%).

We noted a poor understanding across the spectrum of hospital staff in our department of what C&B was and how it worked. We also noted that some general practitioners (GPs) delegated the bookings to administrative staff. Some patients were not receiving cancellations following rejection of a C&B request. The system should allow GPs to identify a rejected C&B request, rebook it and inform the patient of this change. Following the identification of this problem in our audit, the C&B team introduced an automated cancellation letter. Presently, we are assessing ways of redirecting appointments within WEEU rather than sending rejections back to the GP. We also wish to be able to include ancillary tests (such as visual fields and orthoptic and optometric assessment) as part of C&B system. At present, WEEU runs a C&B system in parallel with a paper-based referral letter system but this audit highlighted the present difficulties with C&B at WEEU and ways to address these issues. We are arranging a meeting with local GPs to update them on our services (especially with respect to the management of age-related macular degeneration) and how to use them better. However, we will have to continue with the paper-based partial booking system until the electronic system is easier to use and more flexible.

Reference

1 http://www.chooseandbook.nhs.uk.

S Moore and P Simcock

West of England Eye Unit, Royal Devon and Exeter Hospital NHS Trust, Exeter, Devon, UK
E-mail: sash@doctors.org.uk

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Sir,

Bilateral intraorbital haematomata following thrombolysis for pulmonary embolism

Haemorrhagic complications following systemic thrombolytic treatment are well documented. However, bilateral orbital haematomata following thrombolysis represents an extremely rare complication.