

Ocular syphilis: case series (2000-2015) from two tertiary care centers in Montreal

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BACKGROUND:

- In 2012, 2003 cases of infectious syphilis were reported to the Public Health Agency of Canada, corresponding to a rate of 5.8 per 100,000 and a 866.67% increase from the 1998 rate of 0.6 per 100,000.^{1,2}
- Commonly known as ‘the great masquerader’, ocular syphilis can cause a myriad of ocular manifestations.

METHODS:

- A retrospective and descriptive study of patients diagnosed with ocular syphilis from January 2000 to December 2015 was undergone.
- Serology was considered positive when the screening treponemal test was positive and;
 - Either the non-treponemal test was positive or a second treponemal test was positive.
 - Confirmatory treponemal tests were performed at the provincial public health laboratory.
- Patients were crossed with the administrative appointment keeping only patients with a visit to the ophthalmology department
- Of all patients who visited both ophthalmology departments, only patients with syphilis-related disease were included.
 - The ocular presentations presumed to be associated with syphilis were anterior (AU), intermediate (IU), posterior (PU) uveitis, panuveitis (PanU), optic nerve (ON) involvement, and interstitial keratitis (IK).

RESULTS:

- From a list of 10,821 positive sera, 4,680 patients were identified, of which 588 had a visit in either of the ophthalmology departments and 119 met the inclusion criteria and were included in the study.

Figure 1 - Yearly distribution of all 119 cases of ocular syphilis

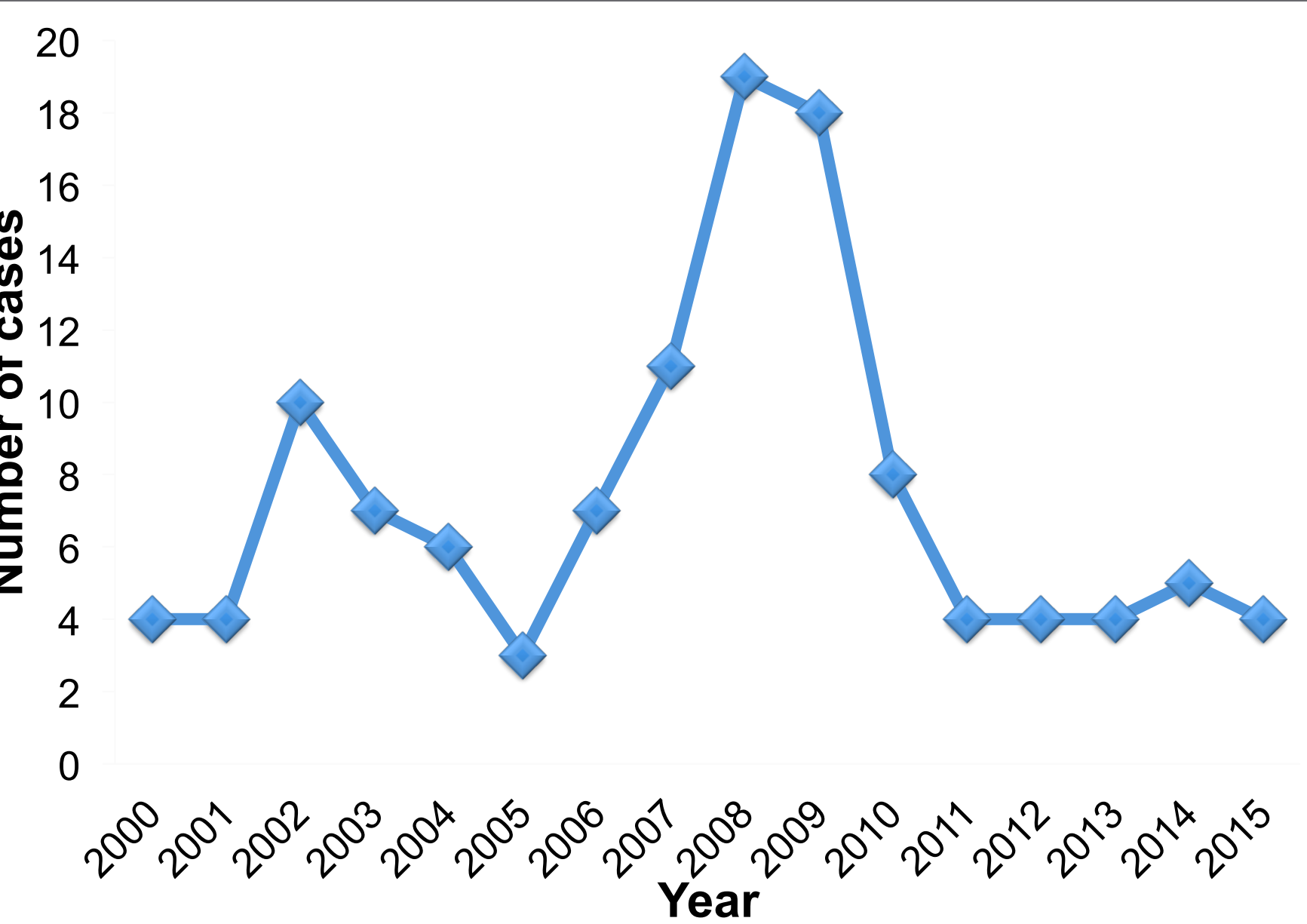


Figure 2 - Distribution of all 119 cases (174 eyes) according to the main site of involvement

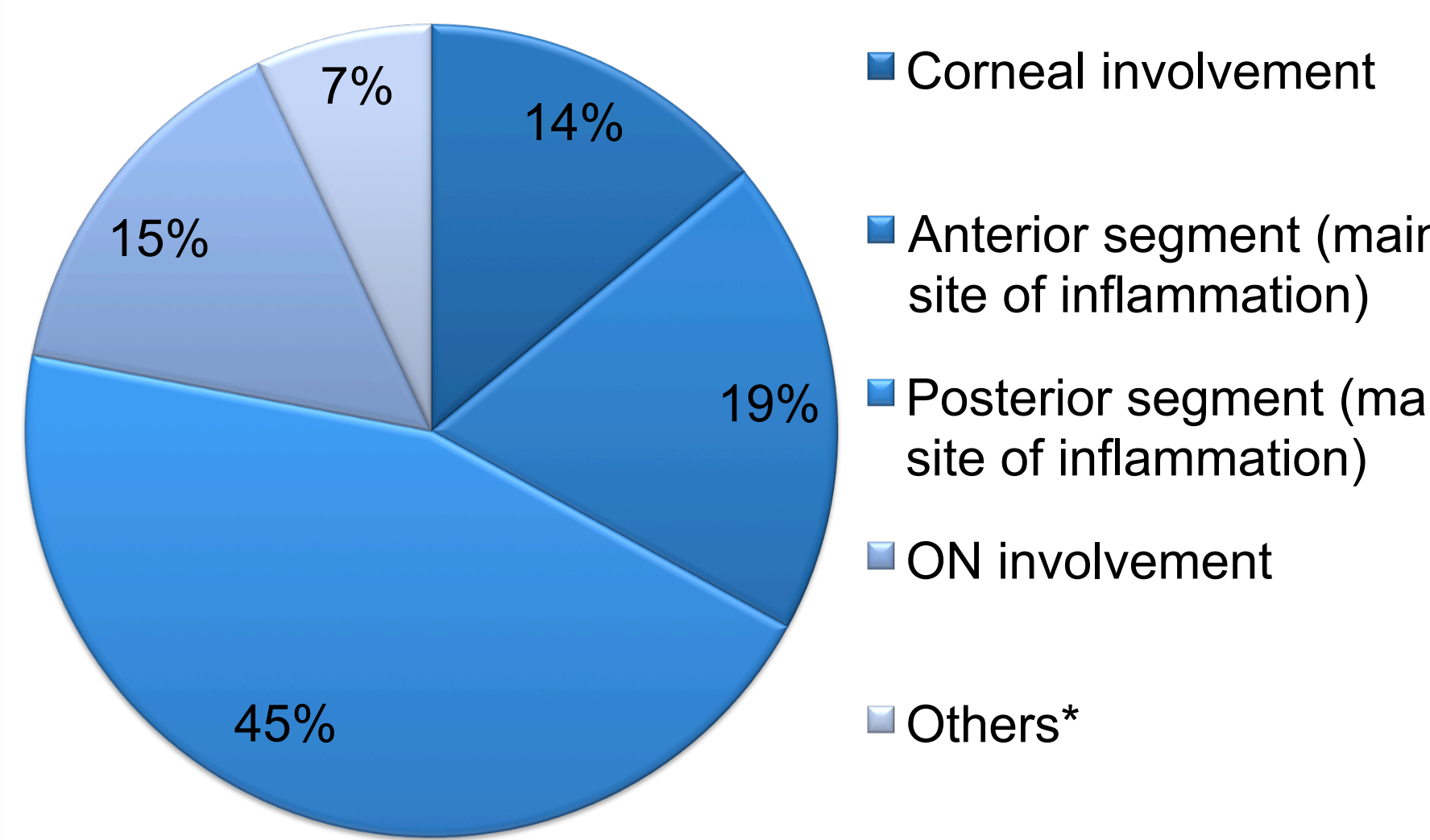


Figure 3 - Comparison between presenting and final visual acuity according to ophthalmologic diagnosis

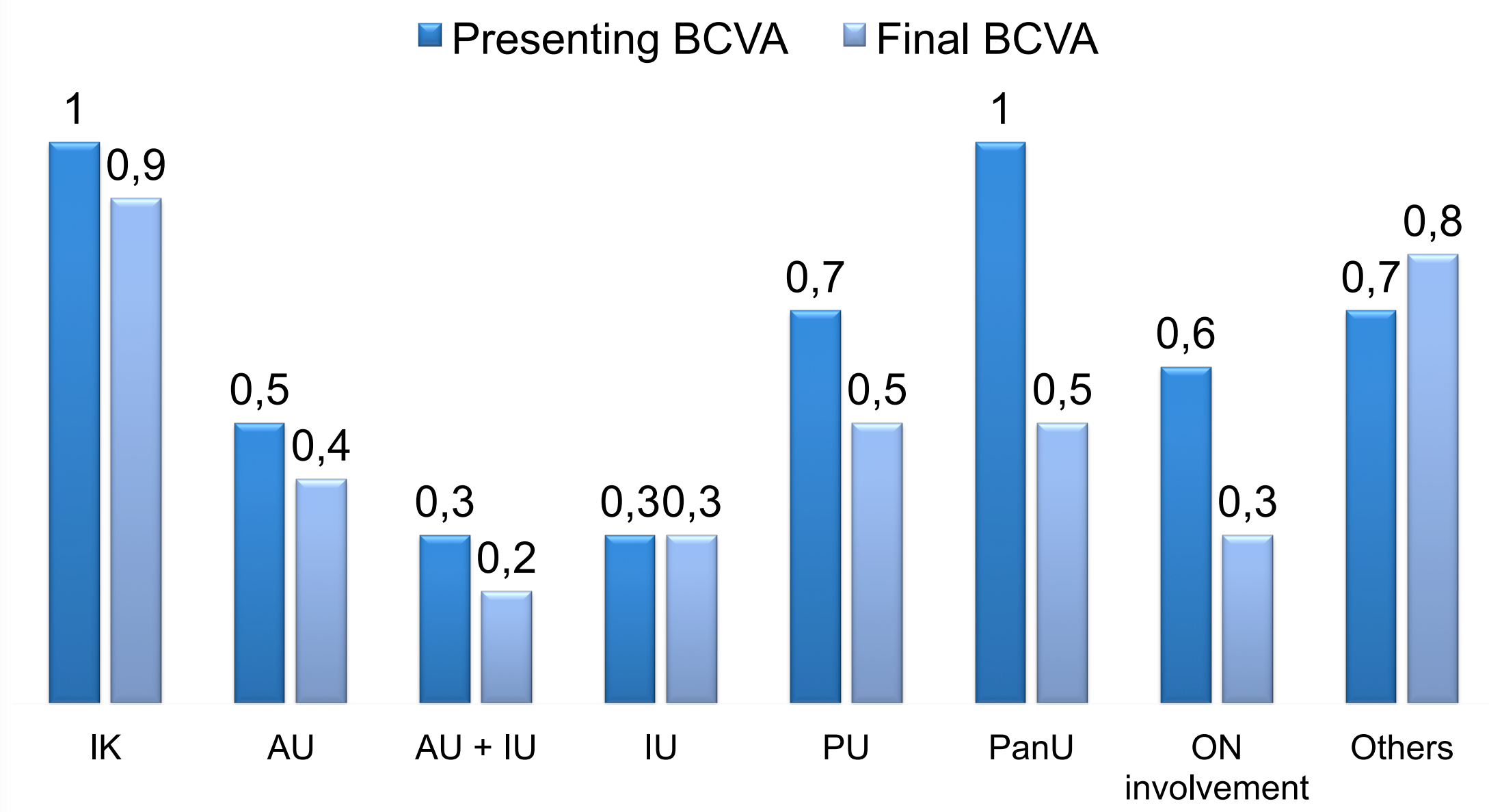


Table 1 - Baseline characteristics of patients with ocular syphilis	
Characteristics	Total (n=119)
Age, years	55 ± 16
Gender, n (%)	
Male	95 (80)
HIV status, n (%)	
Known positive HIV	30 (25)
Newly diagnosed HIV	8 (7)
Negative HIV	42 (35)
Unknown	39 (33)
Laterality, n (%)	
Unilateral	64 (54)
Bilateral	55 (46)
Anatomical location of ocular inflammation, n (%) ^a	
Interstitial keratitis	24 (14)
Anterior uveitis	33 (19)
Anterior + Intermediate uveitis	8 (5)
Intermediate uveitis	13 (7)
Posterior uveitis	31 (18)
Panuveitis	27 (15)
Optic nerve involvement	26 (15)
Others ^b	12 (7)
Lumbar puncture, n (%)	
Performed	65 (55)
Abnormal lumbar puncture, n (%)	
At least 1 abnormal value	46 (71)
Reactive CSF VDRL	14 (22)
Elevated WBC count ^c	28 (43)
Elevated protein concentration ^d	39 (60)
Antibiotics, n (%)	
Penicillin (IV or IV & IM)	67 (56)
Penicillin (IM only)	26 (22)
Others ^e	4 (3)
No treatment	22 (19)
LogMAR BCVA (Snellen equivalent)	
Presenting	0.7 (20/100)
Final	0.5 (20/60)
p value ^f	< .01

HIV = Human immunodeficiency virus, CSF = Cerebrospinal fluid, VDRL = Venereal Disease Research Laboratory, WBC = White blood cell, IV = Intravenous, IM = Intramuscular, BCVA = Best corrected visual acuity
^a n refers to number of eyes
^b Others include VI nerve palsy, scleritis, episcleritis, retinal detachment, ocular ischemic syndrome
^c Considered positive if >5 for HIV negative patient, >20 for HIV positive patient
^d Considered positive if >0.40
^e Others include doxycycline, azithromycin, ceftriaxone
^f p value was calculated using t-test

Table 2 - Subgroup analysis of characteristics between HIV-positive and HIV-negative			
Characteristics	HIV-positive (n=38)	HIV-negative (n=42)	p value ^a
Age, years	43± 12	53 ± 12	< .01
Gender, n (%)			
Male	38 (100)	36 (86)	
Female	0 (0)	6 (14)	.02
Sexual orientation, n (%)			
MSM	24 (63)	8 (19)	< .01
Heterosexual	2 (5)	17 (40)	< .01
Bisexual	1 (3)	2 (5)	
Unknown	11 (29)	15 (36)	
Anatomical location of ocular inflammation, n (%) ^b			
Interstitial keratitis	0 (0)	2 (3)	
Anterior uveitis	9 (17)	13 (22)	
Anterior + intermediate uveitis	2 (4)	4 (7)	
Intermediate uveitis	4 (7)	7 (12)	
Posterior uveitis	8 (15)	11 (18)	
Panuveitis	12 (22)	15 (25)	
Optic nerve involvement	12 (22)	7 (12)	
Others ^c	7 (13)	1 (2)	.03
Lumbar puncture, n (%)			
Performed	32 (84)	23 (55)	< .01
Not performed	6 (16)	19 (45)	
Abnormal lumbar puncture, n (%)			
At least 1 abnormal value	28 (88)	13 (57)	.02
Reactive CSF VDRL	7 (26)	5 (22)	
Elevated WBC count ^d	22 (69)	5 (22)	< .01
Elevated protein concentration ^e	24 (75)	10 (43)	.02
Antibiotics, n (%)			
Penicillin (IV or IV & IM)	30 (79)	29 (69)	
Penicillin (IM only)	3 (8)	9 (22)	.01
Others ^f	1 (3)	1 (2)	
No treatment	4 (10)	3 (7)	
LogMAR BCVA, (Snellen equivalent)			
Presenting	0.5 (20/60)	0.8 (20/120)	
Final	0.3 (20/40)	0.5 (20/60)	
p value ^a	.07	.03	

MSM = Men who have sex with men, HIV = Human immunodeficiency virus, CSF = Cerebrospinal fluid, VDRL = Venereal Disease Research Laboratory, WBC = White blood cell, IV = Intravenous, IM = Intramuscular, BCVA = Best corrected visual acuity
^a p values were calculated using t-test or χ² test of significance.
^b n refers to number of eyes
^c Others include VI nerve palsy, scleritis, episcleritis, retinal detachment, ocular ischemic syndrome
^d Considered positive if >5 for HIV negative patient, >20 for HIV positive patient
^e Considered positive if >0.40
^f Others include doxycycline, azithromycin, ceftriaxone

CONCLUSIONS:

- Considering its diverse clinical presentations, it is primordial to keep this diagnosis in mind, especially since the treatment is readily available and has an excellent outcome.
- It is important to ensure that all patients with ocular syphilis are evaluated for other STD and tested for HIV.
- Optimal management should include a LP and a neurosyphilis treatment regimen.

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