CASE REPORT

The Jarisch-Herxheimer Reaction in Ocular Syphilis

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Summary

A patient with ocular syphilis is presented. She experienced deterioration in vision following the commencement of treatment due to a Jarisch-Herxheimer reaction. This is a transient febrile illness that can occur in patients after the first adequate dose of an anti-microbial drug to treat infectious diseases such as syphilis, Lyme disease and relapsing fever. However, a Jarisch-Herxheimer reaction occurring in a patient receiving treatment for ocular syphilis can be serious, resulting in the rapid loss of vision.

Key Words: Ocular syphilis, Jarisch-Herxheimer Reaction

Introduction

Syphilis affects ocular structures in the secondary and tertiary stages. We present a case of ocular syphilis in which worsening of the ocular findings occurred after commencement of parenteral crystalline penicillin. We believe it is attributed to the Jarisch-Herxheimer reaction. It is important for clinicians managing patients with ocular syphilis specifically and syphilis in general, to take note of the possibility of such an occurrence.

Case Report

A 22-year old woman had experienced blurring of vision in both eyes over the previous six months prior to presentation. There was occasional ocular pain, redness, floaters and photophobia. This patient had been a sex worker for the past four years and had multiple unprotected sexual encounters. She had been treated with systemic antibiotics several years earlier when she presented with per vaginal discharge.

At the time of presentation at the University Malaya Medical Center (UMMC), her vision was 6/24, corrected to 6/9 with a pin-hole in the right eye and 2/60 with no improvement with a pinhole in the left eye. The anterior segments and intraocular pressures in both eyes were normal. Both pupils were equal and reactive to light and accommodation. Examination of the fundus in the right eye revealed vascular sheathing and cuffing, presence of flamed-shaped haemorrhage on the retina, gross neovascularisation especially of the inferior retina but not involving the disc and diffuse vitreous haemorrhage. In the left eye, there was an extensive fibrovascular membrane obscuring the optic nerve head, sheathing of the vessels and vitreous haemorrhage. General examination did not reveal any signs suggesting central nervous involvement of syphilis.

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A provisional diagnosis of bilateral retinal vasculitis was made. The full blood count revealed a raised white count of 15,300 cells per/mm^3, ESR was raised (45mm/1st hour). The RPR titre was 1:16 and TPHA test was positive confirming an active syphilitic infection. Cerebrospinal fluid analysis was normal. The chest x-ray, Mantoux test, toxoplasma serology and anti-nuclear factor were normal. HIV screening was negative. Blood sugar and serum electrolytes were normal.

The patient was commenced on oral prednisolone of 40mg daily and bilateral pan-retinal photocoagulation was carried out in view of the florid neovascularisation. When syphilis was confirmed by serology, the patient was promptly started on intravenous crystalline penicillin for fourteen days. Oral prednisolone was stopped.

Six hours after the administration of the first dose of penicillin, the patient developed a Jarisch-Herxheimer reaction. She had fever, associated with chills and rigors, intense headache and generalized pruritus. She also complained of a sudden decrease in her vision. Visual acuity in the right eye had decreased to 4/60 while left vision was 1/60. The right anterior chamber showed activity of 2+ cells. Vitritis was present in the right eye. The right optic disc was swollen and hyperaemic with the presence of macular oedema and a macular star. There were multiple cotton wool spots. The left fundus findings were the same as before. Fluorescein angiogram revealed extensive leakage around the right optic disc and areas of non-perfusion in the inferotemporal quadrant.

A diagnosis of right neuroretinitis accompanying the Jarisch-Herxheimer reaction was made. The patient was given oral anti-pyretics, which improved systemic symptoms. She was started on 60mg of oral prednisolone daily for two weeks, which was gradually tapered. Visual acuity in the right eye improved to 6/60 over the next few days. Left vision improved to 3/60. One month later, vision in the right eye had improved to 6/12. The left vision was 6/60. There were no cells seen in the right anterior chamber. The right optic disc appeared normal. Macula oedema and cotton wool spots were no longer present. However, the macular star remained (Figure 1). The patient was lost to follow-up.

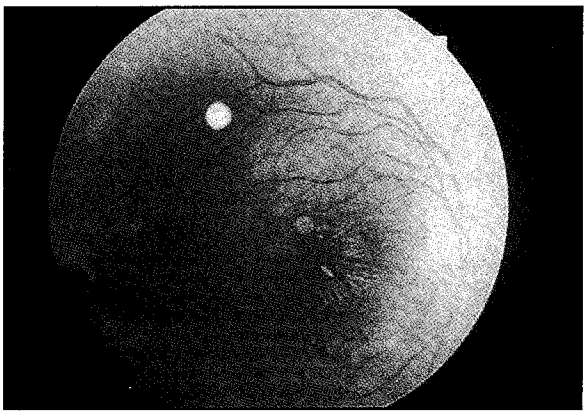

Fig. 1: The right fundus after resolution of neuroretinitis. The optic disc was no longer swollen and hyperaemic. Part of the macular star remained

Discussion

A resurgence of syphilis has been noted in recent years due to the pandemic of acquired immunodeficiency syndrome (AIDS). Syphilis remains an important cause of ocular disease[1]. Ocular manifestations of syphilis commonly occur in secondary syphilis.

Uveitis is the most common ocular manifestation of syphilis in both HIV-positive and HIV-negative patients,[1]occuring in about 8% of patients with secondary syphilis. Virtually any ocular tissue could be affected. Alopecia of the eyelashes and eyebrows, conjunctivitis, blepharitis, orbital periostitis, episcleritis, keratitis, anterior uveitis, posterior uveitis, dacryocystitis, dacryoadenitis are associated with this condition. Optic neuritis, chorioretinitis and neuroretinitis seen at this stage of the disease are frequently associated with meningitis. Glaucoma can occur secondary to

uveitis, neovascularization of angle structures, hypertrophy of Descements membrane or multiple intraepithelial cysts.

Tertiary syphilis is characterized by gummas, which can occur in the eyelid, iris, ciliary body, choroid or retina. The classic neuro-ophthalmic finding of neurosyphilis is the Argy11-Robertson pupil. Ocular manifestations of neurosyphilis include cranial nerve palsies, extraocular muscle involvement, ptosis and optic atrophy.

Our patient presented initially with bilateral retinal vasculitis complicated by vitreous haemorrhage in both eyes and the formation of fibrovascular tissue in the left eye. Investigations were performed to ascertain the cause of the vasculitis, namely screening for connective tissue disorders, spondyloarthritides, specific infections like tuberculosis, syphilis and other caused of inflammatory eye diseases like sarcoidosis. HIV screening was also necessary in view of the increased risk of a concomitant HIV infection with syphilis[1].

Although CSF examination for syphilis was negative, the patient was given the same treatment as that for neurosyphilis (i.e., high-dose intravenous aqueous crystalline penicillin G 12 to 24 million units/day for ten to fourteen days). This is because ocular syphilis is a form of neurosyphilis[2].

The Jarisch-Herxheimer reaction is a systemic illness first noted in association with antibiotic therapy for neurosyphilis. This reaction has been noted to occur in seventy five percent of secondary syphilis patients undergoing penicillin treatment. It has also been observed after initiation of effective treatment with other diseases, namely Lyme disease, Whipple's disease and relapsing fever. It is a transient reaction characterized by fever, headache, malaise and myalgia. Patients could experience a worsening of symptoms. The aetiology is still unknown, but the reaction may result from toxic products of dead or dying treponemes reacting with sensitized syphilitic tissues.

No methods are generally advocated to prevent such reactions, except to warn the patients of this occurrence and to manage symptoms with the use of antipyretics, analgesics, fluids and rest[3]. This patient experienced sudden deterioration of vision in both eyes due to exacerbation of the vasculitis, accompanied by the development of neuroretinitis in her right eye at the time of onset of systemic symptoms. Fortunately, prompt administration of oral prednisolone resulted in resolution of the symptoms, further improvement in vision was seen as penicillin eradicated the infection.

Although the efficacy of steroids in Jarisch-Herxheimer reactions has not been evaluated in clinical trials, its use can be supported in selected situations for a short duration, in conditions when local inflammation can cause serious functional compromise, as in second or eighth cranial nerve involvement, syphilitic paresis and pregnancy complicated by syphilis[3]. Therefore, it is important for clinicians who are treating patients with ocular syphilis specifically and syphilis in general, to anticipate this possible complication of treatment so that the patients may be managed appropriately.

References

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