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Asymptomatic Bilateral Optic Perineuritis in Secondary Syphilis

Sir,
The importance of syphilis as a cause of ocular disease has been recognized since 1858 (1); however, over the years, the spectrum of ocular manifestations of this disease has changed, possibly due to the advent of antibiotic therapy (2). Early diagnosis is important, in view of the potentially sight-threatening sequelae of syphilitic eye disease, which strongly suggests involvement of the central nervous system and requires aggressive therapy with high-dose aqueous penicillin (3, 4). In an attempt to increase awareness among dermatologists of this manifestation, we describe here 2 cases of asymptomatic bilateral optic perineuritis in HIV-negative patients with secondary syphilis.

CASE REPORTS

Case 1

A 20-year-old Caucasian female presented with a 2-month history of generalized rash, malaise and fatigue. She denied knowledge of exposure to syphilis and of previous skin lesions on the genital region or elsewhere. She revealed diffuse lympadenopathy and a generalized rash consisting of multiple round, indurated, erythematous papules on the palms and soles. These lesions were hyperkeratotic, whereas in the anogenital and buccal regions they were flattened and macerated. Dark-field microscopy of these lesions showed the presence of spirochetes. Routine laboratory investigations revealed a positive (1 : 10,240) *Treponema pallidum* haemagglutination assay (TPHA). Lumbar puncture showed normal opening cerebrospinal fluid (CSF) pressure, negative syphilis serology and cryptococcal antigen assay, a total protein level of 40 mg/100 ml, a glucose level of 53 mg/100 ml and a white blood cell count of 13/mm^3.

Case 2

A 32-year-old Caucasian female patient presented with a 3-week history of painless, papular lesions in the anogenital region. She denied knowledge of previous exposure to syphilis and any constitutional symptoms.

Her medical history was unremarkable. She revealed several erythematous, painless, oozing papules with partially papillated surface in the anogenital region and a generalized lymphadenopathy. Dark-field microscopy of the lesions showed the presence of spirochetes. Routine laboratory investigations revealed a serum TPHA of 1 : 2560 and a positive (4+) fluorescent *Treponema pallidum* antibody absorption. Lumbar puncture demonstrated a normal

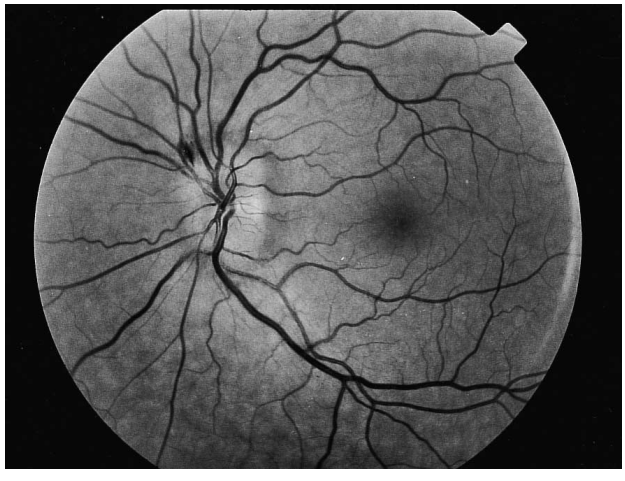

Fig. 1. Blurred optic disc margins and a superficial flame-shaped haemorrhage at 11 o'clock position in the left eye of case 1.

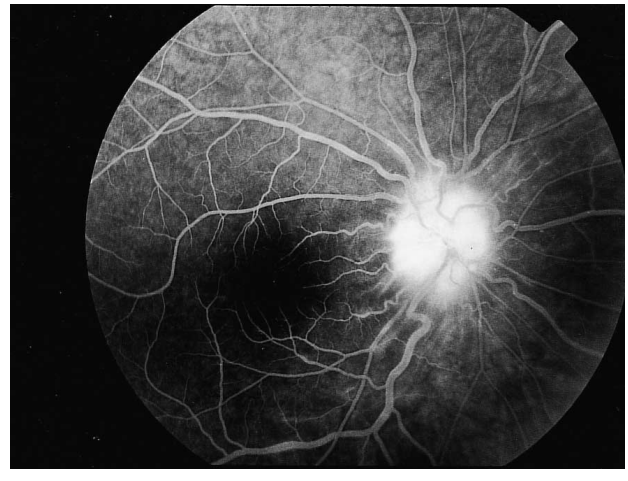

Fig. 2. Fuzzy hyperfluorescence at the optic disc due to leakage from the dilated capillaries in the right eye of case 2.

opening CSF pressure, negative syphilis serology and cryptococcal antigen assay, total protein level of 20 mg/100 ml, a glucose level of 79 mg/100 ml and white blood cell count of 2/mm^3.

Diagnoses

In both patients latex agglutination tests for *Haemophilus influenzae*, pneumococcus and meningococcus, bacterial and fungal cultures were negative. Serum and CSF antibodies to HIV were negative in both cases, as shown by ELISA and Western blot analysis. In both cases the diagnosis of secondary syphilis was made. Heart ultrasonography and a computed tomographic scan of the head were normal in both patients.

Despite the absence of any ocular symptoms or complaints, the patients were referred for an ophthalmological examination, which revealed a bilateral marked optic disc swelling associated with a flame-shaped haemorrhage on the optic disc margin and dilated retinal veins in both patients (Fig. 1).

In both patients fundus examination of slit-lamp biomicroscopy showed a clear vitreous without any evidence of inflammation in both eyes. Visual acuity was 20/20 in both eyes of the patients. Also the findings of fluorescein angiography were almost identical in the patients and revealed dilated and telangiectatic prepapillary capillaries in the early arteriovenous phase. In the mid-phase a leakage of dye from the optic disc was observed, whereas, in the late phase a residual disc hyperfluorescence was detected. The fuzziness of the hyperfluorescent optic nerve extended beyond the optic disc margins (Fig. 2). In both patients the visual fields revealed an enlarged blind spot.

Treatment

Both patients received a 21-day intravenous administration of aqueous penicillin G (6×10^6 IU every 6 h/day), which resulted in the complete remission of the cutaneous and fundus lesions and in the complete resolution of the optic disc findings.

DISCUSSION

The exact incidence of ocular syphilis is unknown. In 1931 Moore (5) observed uveitis in 4.6% of patients with secondary syphilis and in 9.3% of those with recurrent secondary syphilis, whereas Schlaegel & Kao (1982) (6) estimated that 1.1% of their uveitis cases in the 1970s were caused by syphilis. Iritis reportedly occurs in about 4% of patients with secondary syphilis, whereas retinitis, chorioretinitis and neuroretinitis are rare in this stage of the disease (1, 7, 8). Other syphilitic manifestations include interstitial keratitis, episcleritis, scleritis, retinal vasculitis, papillitis, cystoid macular oedema, optic atrophy and exudative retinal detachment (4). The diagnosis of "syphilitic optic perineuritis" should be restricted to syphilitic patients with an inflammation of the optic nerve sheaths that spares the optic axons and results in optic disc swelling (9) in the absence of increased CSF pressure, nerve fibre dysfunction and visual impairment (10). The patients reported here meet the clinical criteria for the diagnosis of optic perineuritis. Since the intracranial pressure was not elevated, as demonstrated by lumbar puncture and visual acuity was normal, the most suitable explanation for the disc swelling in our cases was a syphilitic inflammation of the optic nerve sheaths that resolved subsequent to adequate penicillin treatment.

Our differential diagnostic considerations included other processes that can cause optic perineuritis, such as sarcoidosis, rickettsial infection, viral meningoencephalitis, cyanotic congenital heart disease, cavernous hemangioma, papillophlebitis, incipient ischaemic optic neuropathy, dysthyroid optic neuropathy and blind-spot-syndrome (11, 12). These disorders were ruled out by the clinical and laboratory investigations.

Since the regimen currently recommended by the Center for Disease Control for the treatment of secondary syphilis (2.4×10^6 IU benzathine penicillin G i.m. $\times$ 1) fails to provide for treponemicidal levels in the CSF (13), as shown by the treatment failures reported so far (14, 15), we treated our patients with high-dose aqueous penicillin G (24×10^6 IU/day) intravenously over a period of 21 days. This resulted in full remission of the skin and fundus lesions of both patients and in complete resolution of the fluorescein angiographic findings.

In view of the recent resurgence in the incidence of syphilis in the general population and its association with AIDS, the possibility of asymptomatic optic nerve sheath involvement in syphilitic patients should be seriously considered.

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