Combined detachments in Wegener's granulomatosis

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SUMMARY We report a case with limited Wegener's granulomatosis in which the eye findings were the initial and only evidence of the disease when the patient was first seen. The patient was unusual in that he developed bilateral combined choroidal and retinal detachments and severe necrotising scleritis, which led to bilateral globe perforations and loss of all sight. We recommend a trial of cytotoxic agents in progressive ocular inflammatory diseases unresponsive to other medications before there is irreversible loss of vision.

Wegener's granulomatosis usually causes sinusitis, necrotising lung granulomas, glomerulonephritis, and a widespread vasculitis that may affect any organ.¹ A limited form of the disease sparing the sinuses and kidneys has a better prognosis, though 20% of patients still die despite treatment with cyclophosphamide.²⁻⁴

Proptosis caused by orbital pseudotumour, conjunctivitis, scleritis, keratitis, and optic nerve vasculitis are the most common ophthalmic manifestations, although anterior and posterior uveitis, retinal artery occlusion, and nasal lacrimal duct obstruction may also occur.⁵⁻⁸ Combined detachment of the choroid and retina has been described histologically,⁹ but, unlike other types of polyarteritis, this has not been seen prior to enucleation. 40% of cases in both forms have ophthalmic manifestations, though these are seldom initial findings and, to our knowledge, have not occurred without other organ involvement.⁵⁻⁸ We report a case of limited Wegener's granulomatosis in which the ophthalmic findings were initially the only evidence of the disease. The ocular signs included exudative combined detachments and unusually severe sclerouveitis that led to bilateral globe perforations and blindness.

Case report

A 61-year-old man was first seen in the eye clinic at the University of Chicago Hospitals and Clinics in September 1976 complaining of burning and redness of both eyes for 1 year. Best corrected vision was RE

6/30, Jaeger 10, and LE 6/12, Jaeger 3. Intraocular pressures were 15 mmHg in each eye. Episcleritis and iridocyclitis with keratic precipitates and moderate aqueous flare and cells were present bilaterally. Topical corticosteroids reduced the inflammation in 2 weeks. The episcleritis and iridocyclitis recurred 6 weeks later as the topical corticosteroids were tapered. Topical, subtenon, and systemic corticosteroids afforded little improvement.

The patient developed bilateral necrotising scleritis in December 1976 and was admitted to the hospital and extensively evaluated for systemic disease. The evaluation included chest and hand roentgenograms, serological testing for syphilis, and tests for antinuclear antibody titre and lupus erythematosus, all of which were negative; and sheep cell agglutination and latex fixation tests, which were positive in low titres. Rheumatology consultants found no evidence of rheumatoid arthritis or other collagen vascular diseases.

Ocular treatment consisted of topical acetylcysteine, prednisolone, atropine, methylcellulose, and bland ointment (Lacrilube). Systemic penicillamine and prednisone were also given. During the following month, the inflammatory reaction subsided.

In February 1977 the patient developed bilateral combined choroidal and serous retinal detachments. This condition, together with the severe anterior and posterior uveitis, reduced his visual acuity to RE 1/120 and LE 1/60 despite the continuation of systemic penicillamine and prednisone. The necrotising scleritis continued to worsen, and progressed to bilateral globe perforations in December 1977, at which time he had no light perception in either eye. In February 1978 the patient was admitted to another

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Fig. 1 Lung biopsy specimen, showing granulomatous inflammation including giant cells, lymphocytes, plasma cells, epithelioid cells, and fibroblastic proliferation effacing normal lung architecture.

hospital with a draining rectal fistula, anorexia, and bleeding haemorrhoids. The chest roentgenogram showed cavitating nodular lung lesions. A biopsy of the lingular lung lobe showed necrotising granulomatous inflammation consistent with the diagnosis of Wegener's granulomatosis. Review of the histopathology at the University of Chicago Hospitals and Clinics confirmed the diagnosis. The lung tissue

contained confluent areas of granulomatous inflammation which included multinucleated giant cells, lymphocytes, plasma cells, epithelioid cells, and fibroblastic proliferation effacing the normal pulmonary architecture (Figs. 1 and 2). Extensive vasculitis involved arterioles, medium sized arteries, and some veins, indicated by an inflammatory infiltrate in the vessel walls that consisted predominantly

Fig. 2 Lung biopsy specimen, showing arteriole with lymphocytes and plasma cells in the vessel wall, suggesting angiocentric inflammation.

Fig. 3 The patient has bilateral phthisis bulbi, no light perception, and marked restriction of extraocular movements.

of lymphocytes and plasma cells, though some neutrophils were also seen. There was marked lymphocytic and plasma cell infiltration within and around the walls of the bronchioles, in the alveolar septa, and within the air spaces. The pleural surface showed marked hyalinisation and fibrosis, and contained lymphocyte, histiocyte, and plasma cell infiltration.

Treatment with cyclophosphamide for several months eliminated the remaining ocular inflammation.

On follow-up examination in June 1980, the patient had no light perception in either eye and bilateral phthisis bulbi (Fig. 3). There was no evidence of ocular inflammation, and the patient felt in good general health.

Discussion

Ophthalmic manifestations of Wegener's granulomatosis are due to vasculitis and include proptosis, conjunctivitis, episcleritis, scleritis, and peripheral corneal ulceration and vascularisation that may be indistinguishable from that of Mooren's ulcer.⁵⁻⁸ Less commonly patients develop anterior and posterior uveitis, retinal artery occlusion, optic nerve vasculitis, and nasolacrimal duct obstruction.⁵⁻⁸ Ophthalmic involvement is usually not severe and, to our knowledge, has not been reported as the sole, initial manifestation of Wegener's granulomatosis. Brubaker and associates⁹ described a patient that presented with unilateral necrotising granulomatous sclerouveitis and intractable pain. The patient, how-

ever, also had sinusitis and pulmonary cysts on chest roentgenography. Two years later the patient developed corneoscleral ulcers in the fellow eye and skin ulcers which healed after treatment with systemic prednisone and cyclophosphamide.

Coutu and associates⁴ reported a case of limited Wegener's granulomatosis in which the ophthalmic findings were present initially and were the most severe manifestations of the disease. The patient, however, also had an abnormal chest roentgenogram, and a lung biopsy confirmed the diagnosis. This patient developed diffuse chorioretinitis and neovascular glaucoma. Despite the institution of treatment with systemic prednisone and azathioprine, which subsequently led to control of the ocular inflammation, the patient lost all vision in both eyes.

Our patient had limited Wegener's granulomatosis with bilateral combined detachments and severe necrotising scleritis that subsequently led to bilateral globe perforations. Vision was lost in both eyes before there was evidence of systemic involvement, despite a thorough search. Although combined detachments occur in patients with uveitis alone or in association with polyarteritis, rheumatoid arthritis and other systemic diseases,¹⁰⁻¹² to our knowledge they have not been found in Wegener's granulomatosis prior to enucleation. Brubaker and associates⁹ found a shallow retinal detachment histopathologically in 1 patient with Wegener's granulomatosis and uveitis, but this was not evident prior to enucleation. The pathogenesis of combined choroidal and retinal detachments in uveitis is a severe choroidal vasculitis

with marked vascular leakage causing a serous separation of the choroid and often a serous detachment of the overlying retina. The most likely explanation for the absence of combined detachments in Wegener's granulomatosis is that the inflammation rarely involves the posterior segment.¹²

Systemic cyclophosphamide alone or in combination with prednisone is the preferred treatment for Wegener's granulomatosis, although other cytotoxic agents are also effective.^{4,8} The dose needed to control the disease is often in the range that suppresses the bone marrow,⁹ so that the patient must be carefully monitored when treated with these agents.

Our patient was unusual in that he had bilateral combined detachments and severe sclerouveitis that led to perforations of both globes. The inflammation was unresponsive to treatment with systemic penicillamine, indomethacin, and prednisone. The ophthalmic inflammation was the only evidence of limited Wegener's granulomatosis when the patient was first seen.

In severe progressive ophthalmic inflammation, markedly reducing the patient's vision and threatening him with blindness, which is unresponsive to other medication, we recommend a trial with cytotoxic agents such as cyclophosphamide before the disease becomes advanced and the eyes are lost.

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