

Comprehensive treatment of Eales' disease

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ABSTRACT

Eales' disease (ED) is an idiopathic, obliterative vasculopathy typically affecting the peripheral retina among healthy young adults. ED is characterised by retinal vasculitis, occlusion, and neovascularisation. The aetiology of the ED is unknown, but in recent years immunological, biological studies have suggested the role of human leukocyte antigen, retinal autoimmunity, and mycobacterium tuberculosis genome in the aetiology of this disease. The medical treatment consists of use of oral corticosteroids, laser photocoagulation, anti-VEGF injections, corticosteroid injections, or vitreoretinal surgery. This article describes all these modes of treatment in a young patient suffering from Eales' disease.

KEY WORDS: Eales' disease, retinal vasculitis, photocoagulation, vitreoretinal surgery

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INTRODUCTION

Eales' disease is an idiopathic, obliterative vasculopathy typically affecting the peripheral retina among healthy young male adults, in the second through fourth decades of life. This disease is observed more often in the Indian subcontinent than in the rest of the world. The aetiology of this disease is unknown, but in recent years immunological, biological studies have suggested the role of human leukocyte antigen, retinal autoimmunity, and mycobacterium tuberculosis genome in the aetiology of this disease. The first case of Eales' disease was described in 1880 by Henry Eales, a British ophthalmologist. The retinal changes include vasculitis, extensive peripheral non-perfusion, and neovascularisation. Neovascularisation of the retina occurs in up to 80% of the patients. The new vessels are formed on the disc (NVD) or on the retina (NVE). Bleeding from neovascularisation is one of the major causes of vision loss. Sometimes epiretinal membrane and macular oedema are presented. The clinical picture is similar to other diseases of the retina, such as diabetic retinopathy, sarcoidosis, collagen diseases, haemoglobinopathy, leukaemia, Behcet's disease, toxoplasmosis, tuberculosis, and Wegener's granulomatosis. The management depends on the

stage of the disease and consists of medical treatment with oral corticosteroids, antituberculous therapy in the active inflammatory stage, and laser photocoagulation and anti-VEGF in the advanced retinal ischaemia and neovascularisation stages. In macular oedema corticosteroid/triamcinolone acetate injections are given [1–3].

The results of vitreoretinal surgery have been found to be satisfactory in cases of vitreous haemorrhage with or without retinal detachment.

This article describes the case of a patient with Eales' disease.

CASE REPORT

The 20-year-old man reported to the Department of Ophthalmology in Lublin in March 2011 complaining about gradually progressive, painless diminution of vision and widened pupil in the right eye for more than week. His visual acuity was 0.6 in the right eye and 1.0 in the left, and the intraocular pressure was 35 mm Hg in the right eye and 22 mm Hg in the left eye. Ophthalmologic examination showed: iris rubeosis, widened pupil, vitreous floaters, veins periodically narrowed, and single haemorrhage at the fundus in the right eye

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and veins periodically narrowed in left eye. These changes suggested retinal ischaemia. Based on a fundus examination of the right eye, Eales' disease was diagnosed (Fig. 1). The patient was qualified to the injection of Avastin on the right eye and laser

photocoagulation in both eyes. He was given two antiglaucomatous drugs (combined timolol/isocarbamid and brimonidine). The patient had macular oedema in both eyes on OCT in August 2011 (Figs. 2 and 3). Once again he was qualified to be

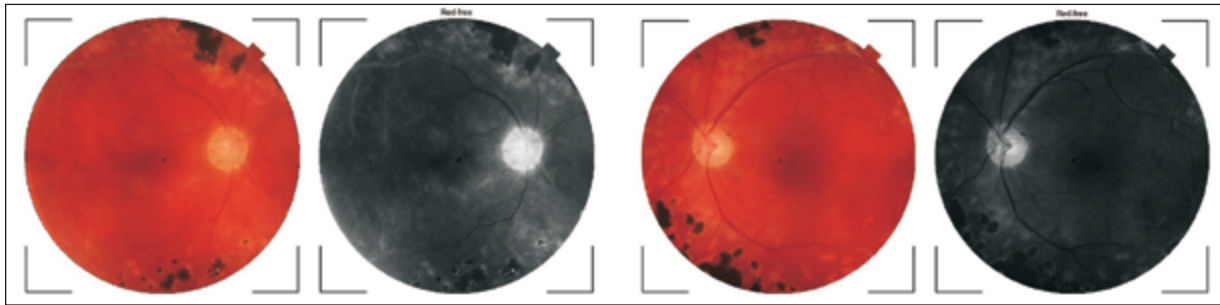


FIGURE 1. Fundus photography of both eyes (right on the right side, left on the left side)

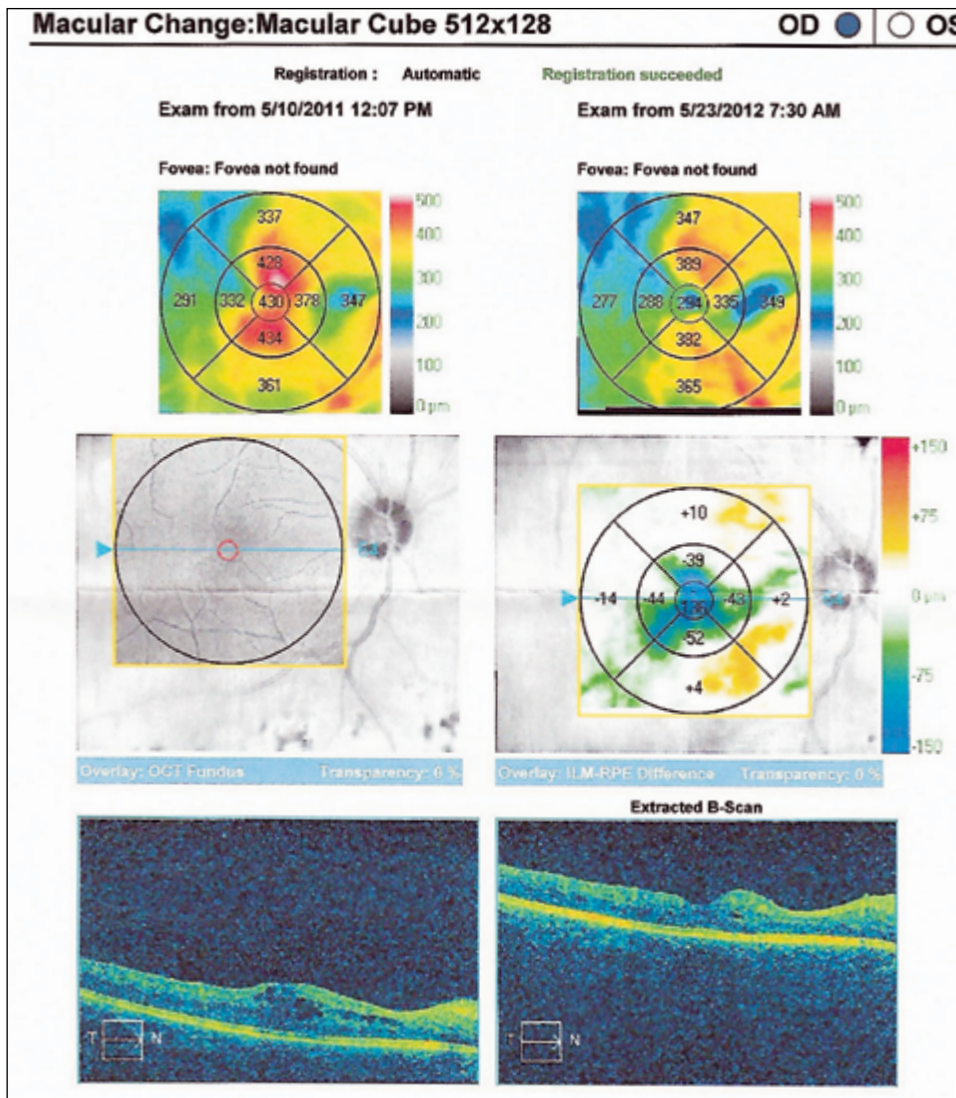


FIGURE 2. Macular oedema in optical coherence tomography of the right eye in 2011

given intravitreal injection of bevacizumab to both eyes. In the right eye the swelling decreased, while the swelling grew in the left eye. The ranibizumab injection was given to the left eye. Vitreous haemorrhage was reported in the right eye, and the patient was qualified for vitreoretinal surgery in November 2012. Vitrectomy surgery with gas tamponade was performed on right eye in the same month. Visual acuity at the control visit was 0.7 cc -1.0 in the right eye and 0.2 in the left eye, and the intraocular pressure was normal. Macular oedema grew up on the left eye, so the patient was qualified to triamcinolone acetonide injection. During examination a cataract was noticed in both eyes. The patient was qualified for surgery of the cataracts (the left eye in 2014; the right eye in 2016). ERM was seen over the surface of the retina in the left eye in 2015.

Vitrectomy surgery containing peeling ILM was performed in the left eye in August 2015. The patient's visual acuity was 0.8 in the right eye and 0.1 in the left eye in September 2016 (Figs. 4 and 5).

DISCUSSION

ED is an idiopathic inflammatory venous occlusion that primarily affects the peripheral retina. This disease is characteristic for healthy young men (20–40 years old) and rarely appears in developed countries.

Oxidative stress is considered as a major factor contributing to the pathogenesis of ED. Patients with ED have vitreous containing high levels of angiogenic growth factors, VEGF, IL-6 and IL-8, and MCP-1 [2].

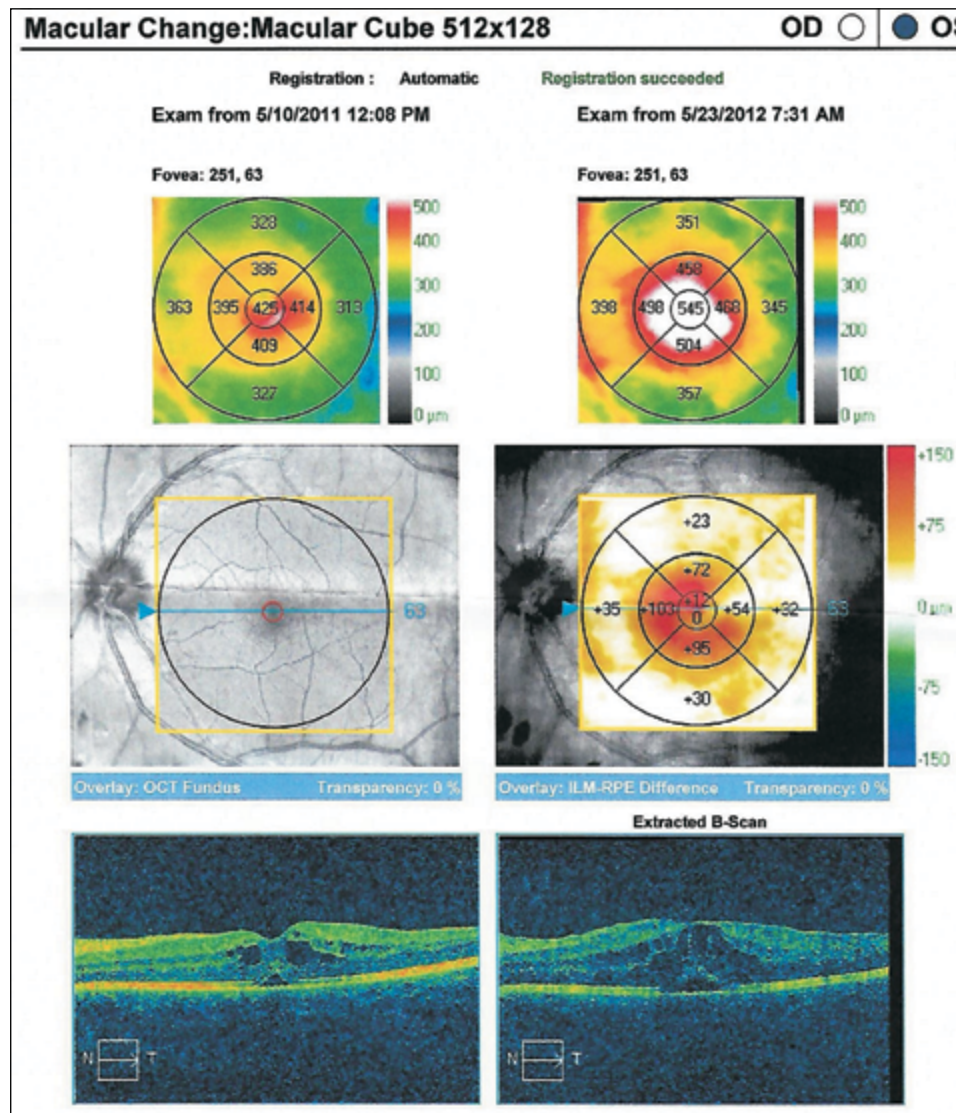


FIGURE 3. Macular oedema in optical coherence tomography of the left eye in 2011

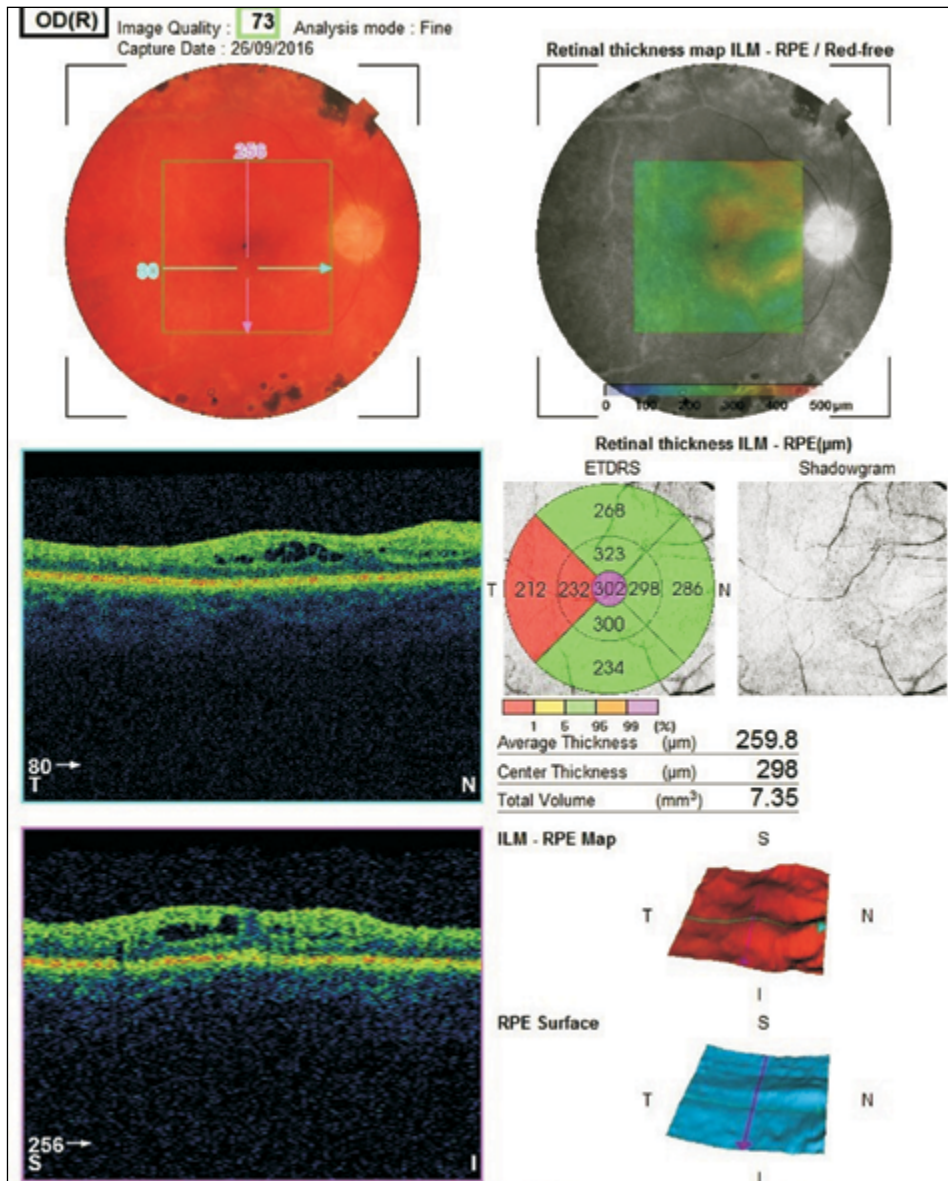


FIGURE 4. Macular oedema in optical coherence tomography of the right eye in 2016

Stages of ED include retinal phlebitis, peripheral non-perfusion, and retinal neovascularisation. The new staging system for Eales' disease is [2]:

- I Periphlebitis of small (Ia) and large (Ib) calibre vessels with superficial retinal haemorrhages;
- IIa Capillary non-perfusion;
- IIb Revascularisation elsewhere/of the disc;
- IIIa Fibrovascular proliferation;
- IIIb Vitreous haemorrhage;
- IVa Traction/combined rhegmatogenous retinal detachment;
- IVb Rubeosis iridis, neovascular glaucoma, complicated cataract, and optic atrophy.

Most patients present symptoms of floaters, specks, cobwebs, blurring, or decreased vision as-

sociated with vitreous haemorrhage. Bilateral involvement is evident in 80–90% of patients. The major manifestations of ED are inflammation, neovascularisation, vitreous haemorrhage, and retinal detachment. Macular involvement (macular oedema and ERM formation) in Eales' disease has been described [1, 4–6].

The management depends on the stage of the disease and consists of medical treatment with oral corticosteroids, antituberculous therapy in the active inflammatory stage, and laser photocoagulation and anti-VEGF in the advanced retinal ischaemia and neovascularisation stages. In macular oedema corticosteroid/triamcinolone acetonide injections are given. The results of vitreoretinal surgery have been

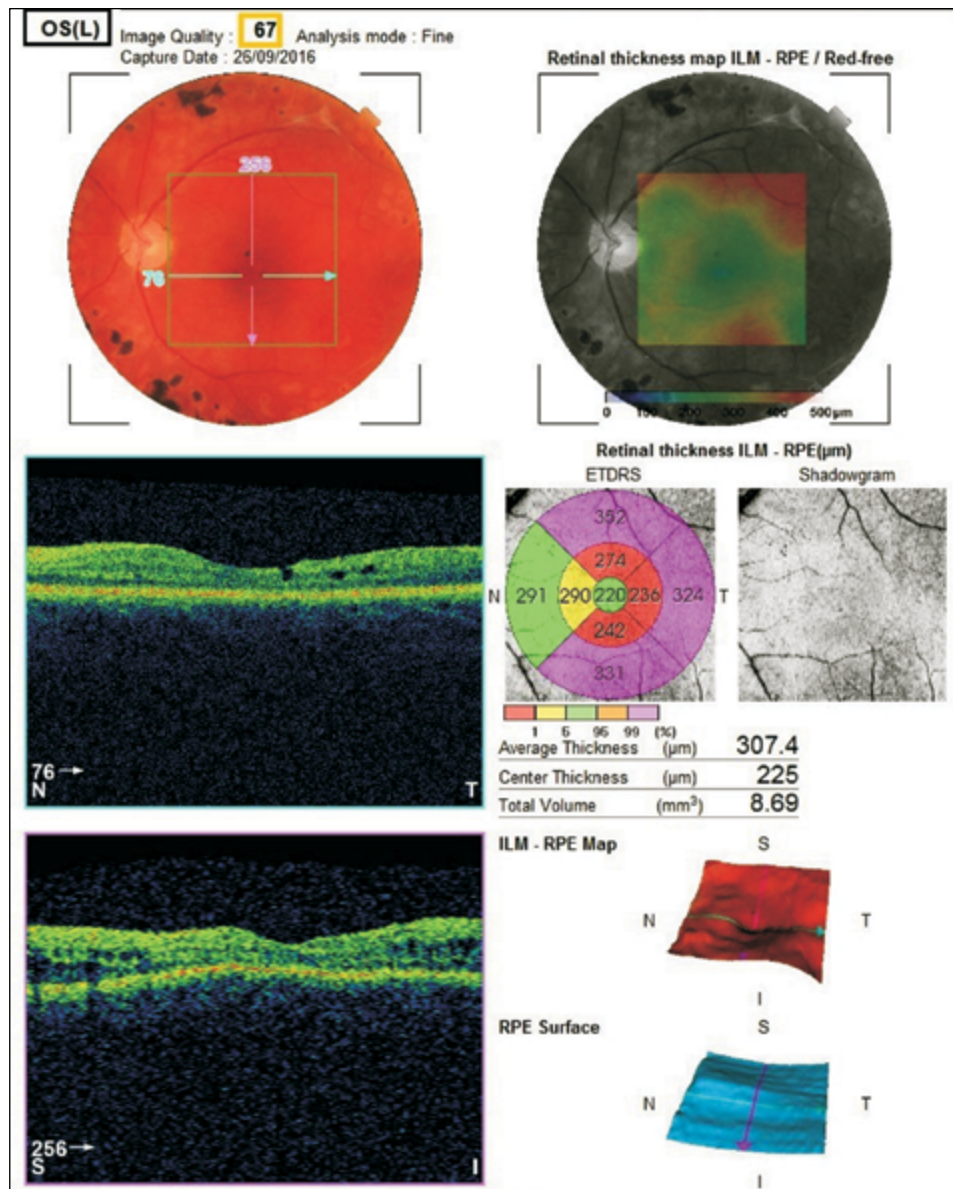


FIGURE 5. Macular oedema in optical coherence tomography of the left eye in 2016

found to be satisfactory in cases of vitreous haemorrhage with or without retinal detachment [1, 4–6].

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