Case report

UDC: 617.735-002-08
doi:10.5633/amm.2015.0409

THE FIGHT AGAINST TIME IN THE TREATMENT OF EALES DISEASE

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Eales disease is characterized by three overlapping stages of retinal vasculitis, occlusion, and neovascularization. Diagnosis is mostly clinical, and its etiology appears to be multifactorial. A 26-year-old woman with manifesting vasculitis of the peripheral retina, retinal neovascularization, and vitreous haemorrhage is presented. Depending on the stage of the disease, its management consisted of medical treatment with corticosteroids in the active inflammatory stage and laser photocoagulation in the advanced retinal ischemia and neovascularization stages. Multiple delicate ocular surgeries were performed due to recurrent vitreous haemorrhage and retinal detachment. The experience acquired in this treatment is evidence of the necessity for treatment immediately after the confirmation of Eales disease. The decision to carry out intensive laser treatment and surgery at the right time could improve the prognosis of Eales disease. *Acta Medica Medianae 2015;54(4):59-63.*

Key words: *Eales disease, retinal detachment, vitrectomy*

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Introduction

Eales disease occurs in young individuals, affecting one or both eyes. The patients have recurrent symptoms: opacity and visual impairment. Eales disease can be confirmed by clinical examination of the peripheral retina, showing: blood vessels occlusion, ischemia, neovascularization, and frequent vitreous bleeding (1). Although the disease was described in 1880, the etiology is still unknown and probably multifactorial, including: the retinal autoimmune process, the mycobacterium tuberculosis genome, and retinal damage caused by free radicals (2, 3). Human leukocyte antigens- HLA such as HLA DR3, A1, B8, B5, 51 and DR 15 (2) are often present in patients with Eales. Depending on the stage of Eales disease, the treatment is based on oral corticosteroids, panretinal laser photocoagulation, and a pars plana vitrectomy (2, 4). This paper presents the sequences of events during the examination and treatment of a patient affected by Eales disease.

Case presentation

Five years ago, a 26-year-old female patient complained of a recurrent headache and poor vision in her left eye. Her medical history, past and present, was negative. The visual acuity (VA) of both her eyes was 20/20 (using the Snellen eye chart), and her intraocular pressure, measu-red by applanation tonometry, was 1.6 kPa (12 mmHg) in both eyes. An anterior segment slit lamp examination showed no disorder. An indirect ophthalmoscopy examination confirmed the following signs in both eyes: optic disc fibrovascular proliferation, rare blot and boat shaped peripheral retinal hemorrhages and a lower vitreous hemorrhage in the left eye. Fluorescein angiography discovered peripheral areas of retinal ischemia and optic disc proliferation leakage, more distinct in the left eye. B-scan ultrasonography examination confirmed posterior vitreous detachment in both eyes, and a vitreous hemorrhage in the left eye.

Biochemical analysis of the patient's blood and biomarkers of inflammation (fibrinogen, C - reactive protein and the sedimentation rate) showed normal values. Immunological blood analyses were performed. Antineutrophil cytoplasmic antibody (ANCA) and antinuclear antibody (ANA) screening, as well as anti DNA ds, rheumatoid factors (RF) IgM and IgG, and the C3 and C4 complement components and circulatory immuno-

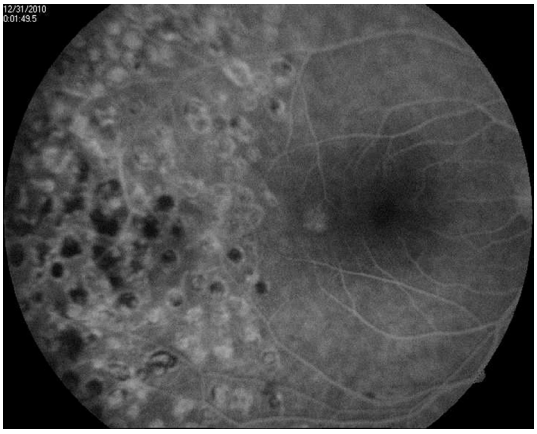

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Figure 1. Red free image of the right macula and the clustered laser scars of the mid-peripheral retina

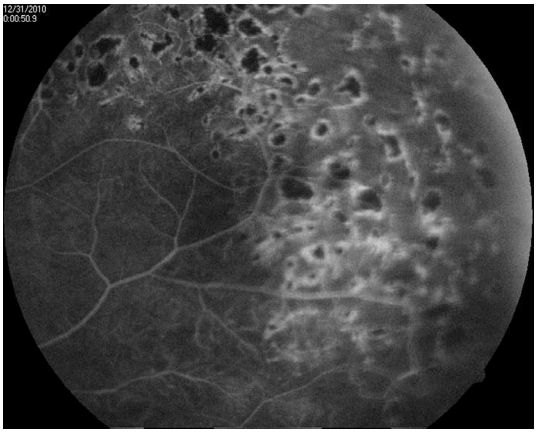

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Figure 2. Red free image of the left mid-peripheral retina laser scars

logical complex were negative. The anticardio-lipin antibody, IgM and IgG, and Mantoux tests were negative as well. HLA typization confirmed the presence of HLA B5. The findings of hematologists, endocrinologists, otologists and neurologists were negative. The MRI of the brain and the chest radiograph were normal. Eales disease was diagnosed on the base of clinical manifestations.

At the beginning of treatment, the intramuscular steroid application (Metylprednisolone 120 mg/day for a week) did not achieve any results. Panretinal laser photocoagulation was performed on both eyes (532 nm diode pumped Nd-Yag laser; 2x4, 000; size of spot- 200 μm, power- 250- 300 mW, duration- 0.12 s) several times over two months (Figure 1, 2).

The residue of the lower vitreous hemorrhage slowed down the laser treatment in the lower peripheral retina on the left eye (Figure 3). A few months later, a decrease in the optic disc fibrovascular proliferation was observed in both eyes (Figure 4). The VA was stable: 20/20.

However, two years later, the symptoms started again. B-scan ultrasonography exam confirmed a profuse vitreous hemorrhage in the left eye. At the same time, an endocrinologist discovered the consequences of Hashimoto thyroiditis, and a cardiologist discovered blood pressure variations, which were stabilized using medication (Tbl. Levothyroxin 25μg and Tbl. Bisoprolol 5 mg once daily). Over the following three months, the vitreous hemorrhage persisted. A pars plana vitrectomy and endolaser photocoagulation were performed on the left eye. During the surgery, areas of retinal neovascularization were found in the lower parts of the peripheral retina. On the first day after surgery, the VA was 20/30, and the anterior and posterior eye segments showed minimal inflammation. Ten days later, a retinal detachment of the entire posterior pole appeared. An internal limiting membrane peeling of the macular area with internal gas tamponade was performed as an urgent procedure. Macula detachment persisted a few days later. An endotamponade was performed using low viscosity silicon oil (5). Soon after that, a severe peripheral retinal detachment occurred, and indicated the need for a new operation: phacoemulsification with artificial lens implantation, a lower quadrant retinotomy and a retamponade with silicone oil. The retinal detachment was successfully reapplied. Torpid post operative iridocyclitis was cured by topical and subconjunctival steroids over the following

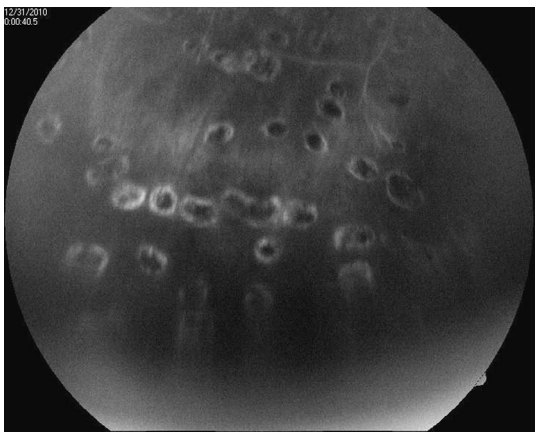

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Figure 3. Red free image of the left lower retina with laser scars

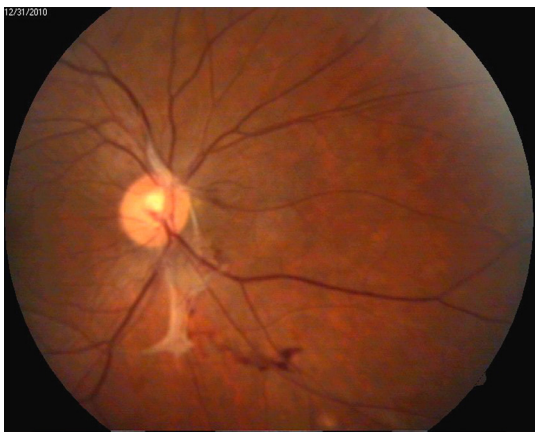

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Figure 4. Vitroproliferative neovascularization of rare regressed optic disc of the right eye

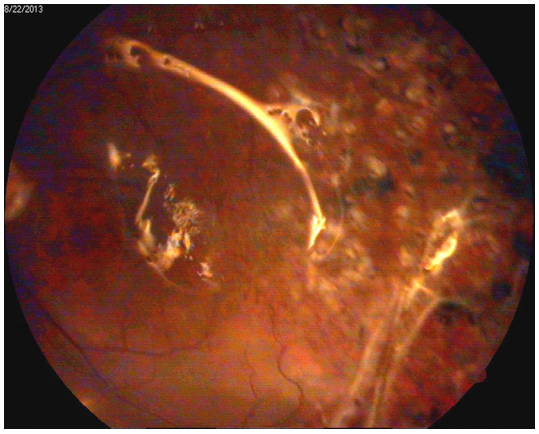

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Figure 5. Macula and lower retinal detachment and traction (under the silicon oil)

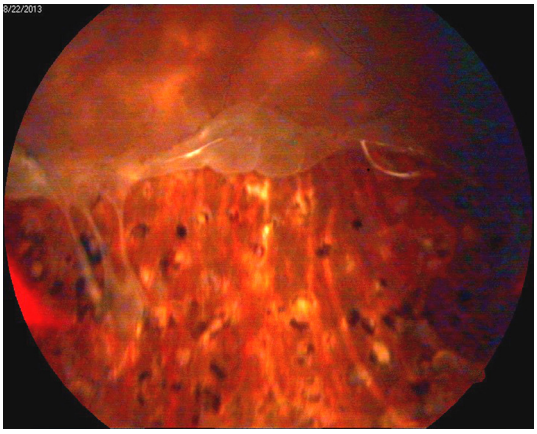

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Figure 6. Lower retinal detachment and traction with residual rare laser scars

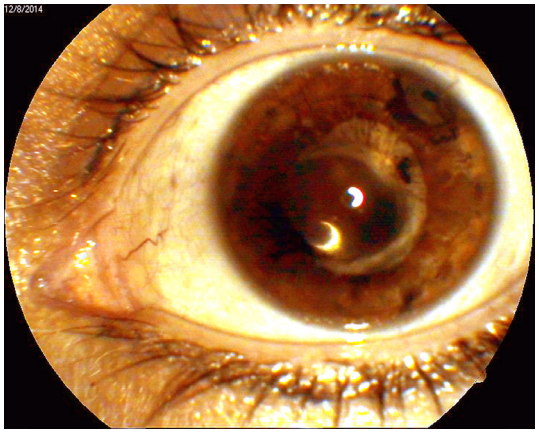

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Figure 7. Left eye anterior segment at the end of the treatment (iris decoloration, posterior synechiae, closed iridectomy at 1 o'clock position)

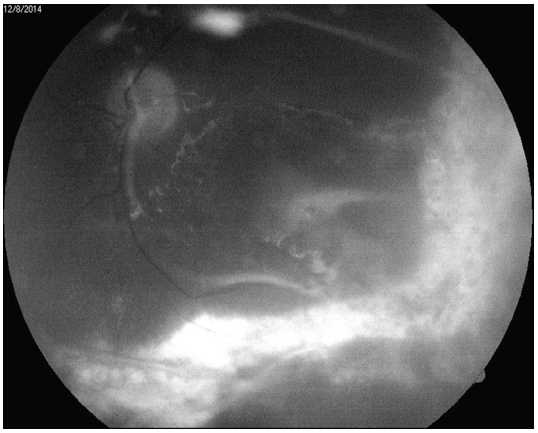

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Figure 8. Red free image of the pale optic disc and big laser scar of the lower retina under the permanent silicone oil tamponade

month.

A few months later, the patient complained of severe pain in her left eye. Applanation tonometry confirmed extremely high intraocular pressure in the left eye, and slit lamp biomicroscopy revealed shallow chamber and pupil seclusion. The silicon oil was eliminated from the space between the posterior iris and capsular bag using an iridectomy and partial synechiolysis. One month later, a planned operation was performed including circular synechiolysis and an internal silicon oil retamponade.

The visual acuity was 20/200, and the tension of the left eye stayed stable for the next six months. However, retinal detachment of the macula and lower retina appeared again (Figure 5, 6).

The detachment was retamponated with Oxane HD silicon oil. Two months later, the HD oil was replaced with low viscosity silicone oil.

At present, a year later, the right eye condition is good, like at the end of the laser treatment five years earlier (VA= 20/ 20). The left eye condition is stable but with poor visual acuity (VA= light perception) (Figure 7 and 8).

Discussion

Eales disease is an idiopathic inflammatory venous occlusive disease. It primarily affects young adults and is often bilateral. It is characterized by overlapping stages of venous inflammation (vasculitis), occlusion, and retinal neovascularization. Diagnosis is mostly clinical and requires exclusion of other systemic or ocular conditions that could present similar retinal features. Recurrent vitreous haemorrhage is the hallmark of Eales disease. Treatment usually involves corticosteroids in the inflammation stage and photocoagulation in the proliferative stage of the disease. Visual pro-gnosis is good if treated early in the course of the disease.

All of the clinical manifestations of Eales disease existed in this case. A posterior vitreous detachment and slow blood reabsorption were observable at the beginning of the treatment as a sign of severe ishemia, at the III b stage according to the Saxena and Kumar staging system (6). A retinal ischemia and the neovascularization process were the main problems in this case. The poor effect of the corticosteroid treatment probab-

ly indicated that the main process was not the inflammation, and the inflammation was only the consequence of the main process. The disease was diagnosed in its advanced stages, which could not be cured by steroids.

There is an opinion that well carried out laser photocoagulation is the basic treatment of Eales disease. Recurrent bleeding with reduced vision has to be treated by a pars plana vitrectomy (2, 4, 7, 8). In this case, panretinal photocoagulation was performed in both eyes with a small distance between the retinal burns (Figure 1 and 2). Very slow blood reabsorption in the left eye decreased the posterior segment visibility and disabled the proper laser treatment on the lower parts of the peripheral retina (Figure 3 and 6). The development of neovascularization and the appearance of profuse bleeding resulted in eight delicate vitreoretinal procedures. The ischemic process and complications dominated throughout follow up. A small area of retina that had not been laser treated became the center of the decompensation which caused the retinal detachment, loss of function and optic disc atrophy (grade IVb) (9).

The experience acquired in this case is evidence that panretinal laser coagulation treatment is necessary immediately after the confirmation of Eales disease. A profuse vitreous hemorrhage has to be recognized as the advanced neovascularization process, which should be stopped by vitreoretinal surgery as soon as possible.

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Prikaz bolesnika

UDK: 617.735-002-08
doi:10.5633/amm.2015.0409

BORBA SA VREMENOM U LEČENJU ILSOVE BOLESTI

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Ilsovu (Eales) bolest karakterišu tri stadijuma koji se prožimaju: retinalni vaskulitis, okluzija i neovaskularizacija. Dijagnoza se uglavnom postavlja na osnovu kliničkog pregleda, a čini se da je etiologija multifaktorijalna. Prikazan je slučaj dvadesetšestogodišnje žene sa manifestnim vaskulitisom periferije retine, okluzijom, retinalnom neovaskularizacijom i krvarenjem u staklastom telu. U zavisnosti od stadijuma bolesti, lečenje se sastojalo od tretmana kortikosteroidima u stadijumu aktivne upale i laser koagulacije u uznapredovalom stadijumu retinalne ishemije i neovaskularizacije. Urađene su brojne delikatne operacije oka zbog ponovljenih krvarenja i ablacije retine. Stečeno iskustvo u toku lečenja je dokaz o neophodnosti za tretman odmah po dijagnostikovanju Ilsove bolesti. Odluka o preduzimanju intenzivnog tretmana laserom i vitroretinalne operacije u pravo vreme može da unapredi rezultate u lečenju Ilsove bolesti.
Acta Medica Medianae 2015;54(4):59-63.

Ključne reči: *Ilsova bolest, ablacija retine, vitrektomija*