
SHORT COMMUNICATION

Case report

Birdshot retinochoroidopathy: measurement of the posterior fundus spots and macular edema using a retinal thickness analyzer, before and after treatment

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PURPOSE. *To measure the retinal thickness in the macular area and at the typical fundus spots in a patient with birdshot retinochoroidopathy, using the retinal thickness analyzer (RTA), a new image analyzer involving laser-slit biomicroscopy, and to quantify the changes after systemic corticosteroid therapy.*

CASE REPORT. *A 54-year-old man with posterior uveitis underwent visual acuity measurement, fluorescein and indocyanine green (ICG) angiographies, optical coherence tomography (OCT) and RTA measurements before and after steroid treatment.*

RESULTS. *The thickness at the birdshot spots measured with RTA remained unchanged after treatment, but the thickness at the fovea decreased in both eyes. Fluorescein and ICG angiographies and OCT showed no change with treatment.*

CONCLUSIONS. *RTA seems a more sensitive method for assessing changes in macula thickness in the course of birdshot retinochoroidopathy and can help document the effect of treatment. (Eur J Ophthalmol 2000; 10: 338-40)*

KEY WORDS. *Retinal thickness analyzer, Birdshot retinochoroidopathy, Medical treatment*

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INTRODUCTION

Birdshot retinochoroidopathy is a rare, chronic, bilateral, recurrent posterior uveitis that usually occurs at the age of 50 years. The disease shows a very close genetic association with HLA-A29 antigen. The main sequelae are cystoid macular edema, optic disc edema, subretinal neovascular membrane and epiretinal membrane. The prognosis is therefore variable. There is no proven therapy, and treatment usually consists of systemic corticosteroids or cyclosporine A (1-3).

This study was designed to evaluate the macular changes before and after steroid therapy, using the new retinal thickness analyzer (RTA), an instrument that measures retinal thickness very precisely. The RTA (Talia Technology, Mevaseret Zion, Israel) consists of an optoelectronic unit and a computerized

system of data acquisition and processing. A green (540 nm) HeNe laser beam is expanded and directed into the eye by a scanning mirror and a fundus image lens. During examination, the patient fixates nine targets, acquisition is activated and yields ten optical cross-sections as well as a fundus image (4).

Case report

A 54-year-old man presented with visual loss due to posterior uveitis. Birdshot retinochoroidopathy was easily diagnosed on biomicroscopy and fluorescein angiographic features and ascertained with the presence of HLA-A29 and HLA-B12 antigens.

At presentation, visual acuity in the right eye (RE) was 20/25, in the left eye (LE) 20/100. Initially fundus

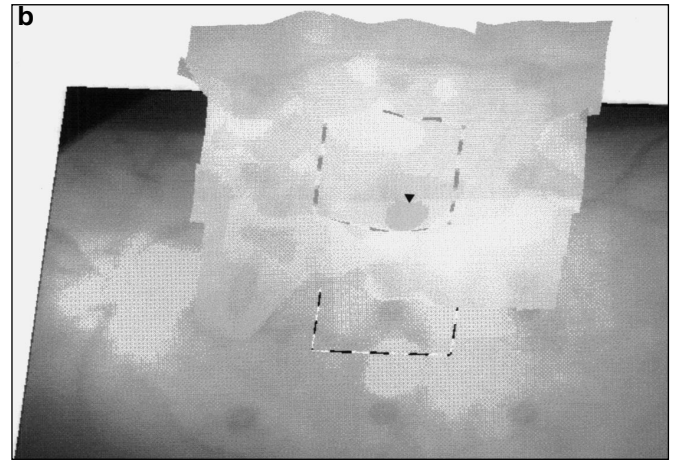
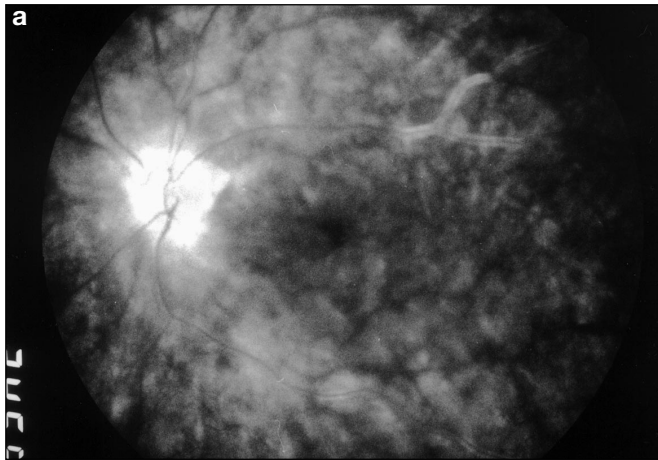


Fig. 1a - Late phase fluorescein angiography of the left eye before treatment, showing diffuse hyperfluorescence of the retina and of the disc, with staining of the supero- and infero-temporal veins.

Fig. 1b - Retinal thickness map of the left eye before steroid treatment; three dimensional color coded mesh. Note the foveal depression (arrow); the mean foveal thickness is 166 μm .

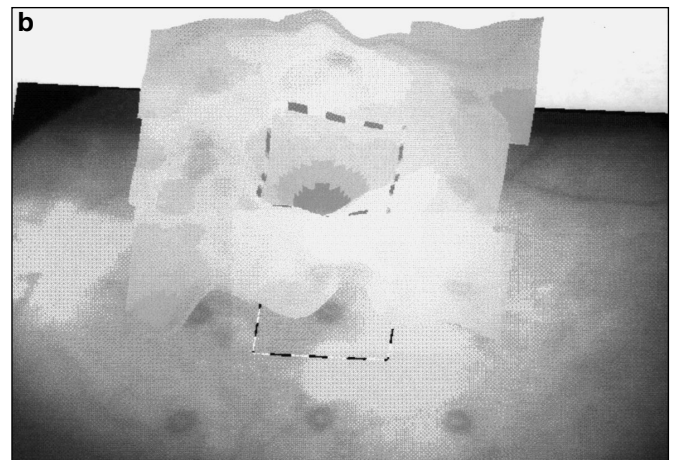
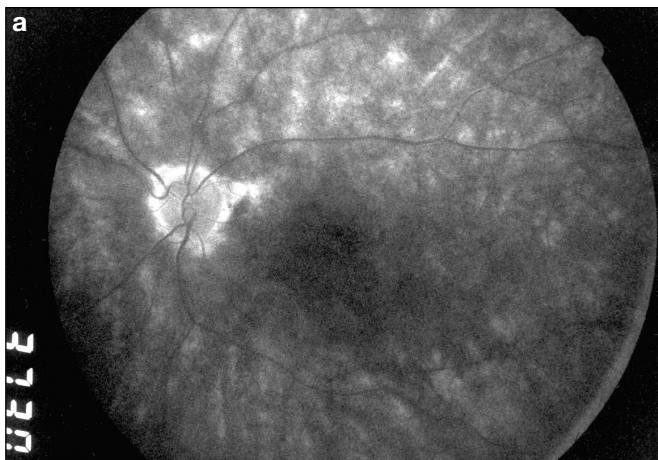


Fig. 2a - Late phase fluorescein angiography after treatment, showing no change in the hyperfluorescence of the retina and optic disc. Venous staining has disappeared.

Fig. 2b - Retinal thickness map of the left eye after one week's steroid treatment. The mean foveal thickness is 122 μm .

examination showed vitritis, perivasculitis, typical sub-retinal, cream coloured spots in the posterior pole and mid-periphery. Fluorescein angiography showed sequelae of perivasculitis and optic disc edema, but no macular edema. In the early phase, the birdshot spots were silent, but showed staining in the late phase. Indocyanine green (ICG) angiography before therapy disclosed more lesions than either ophthalmoscopy or fluorescein angiography. Birdshot lesions appeared well-delineated, hypofluorescent, similar in size to the lesions identified biomicroscopically. The mean foveal thickness measured with RTA was 167 μm RE and 166 μm LE (Fig. 1). Optical coherence to-

mography (OCT) did not show macular edema; the birdshot spots were undetectable.

Corticosteroid therapy was started to control the recurrence of the inflammatory process. For the first week intravenous injections of 500 mg per day were given, then systemic oral steroids for one month (40 mg per day).

After one week of treatment visual acuity remained stable in RE (20/25), but improved to 20/70 in LE; at one month visual acuity was unchanged. Biomicroscopic, fluorescein and ICG features remained unchanged. RTA examination, one week after the start of steroid therapy, showed retinal thickness was 142

µm RE and 122 µm LE; at one month it was 127 µm RE and 116 µm LE (Fig. 2). The thickness of the birdshot spots in the posterior pole was unchanged before and after treatment. OCT showed that the foveal area was unchanged after treatment.

DISCUSSION

Fluorescein and ICG angiography were done, and foveal thickness measured by RTA in a patient with birdshot retinochoroidopathy. Fluorescein angiography is useful for the management of birdshot retinochoroidopathy because it permits an assessment of inflammatory lesions and of sequelae which may need specific treatment. ICG angiography, however, is a poor indicator of the disease activity and sequelae.

In our study, RTA found a relationship between foveal thickness and visual acuity. RTA could detect small changes in retinal thickness of less than 100 µm that were undetectable by fundus examination and

stereoscopic fluorescein angiography (5). Depth resolution and depth precision of RTA are reported, respectively, 50 µm and 10 µm (4).

These findings indicate that measuring the mean foveal thickness by RTA may be more informative than assessing fluorescein leakage on fluorescein angiography. RTA measurements have the additional clinical advantage of being non-invasive.

In conclusion, RTA is useful to document improvement in visual acuity in eyes with birdshot retinochoroidopathy treated with corticosteroids, showing the progressive reduction of mean foveal thickness after systemic treatment.

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