INTRAVITREAL INJECTION OF BEVACIZUMAB (AVASTIN®) FOR RETINAL ANGIOMATOUS PROLIFERATION

INYECCIÓN INTRA VÍTREA DE BEVACIZUMAB (AVASTIN®) PARA PROLIFERACIÓN ANGIOMATOSA RETINIANA

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ABSTRACT

Clinical case: An 81-year-old man presented with stage 2 retinal angiomatous proliferation (RAP) as identified by fluorescein angiography and optical coherence tomography (OCT), and was shown to have a visual acuity (VA) of 20/40. One week after an intravitreal injection of bevacizumab (1.25 mg) the VA improved to 20/25, and the OCT showed a reduction of both intraretinal edema and pigment epithelium detachment. Three months after the injection, no ocular complications were observed, VA was 20/20 and the OCT showed an almost normal macular contour.

Discussion: Intravitreal injection of bevacizumab may provide another treatment option for patients with RAP (Arch Soc Esp Oftalmol 2008; 83: 53-56).

Key words: Bevacizumab, intravitreal injection, retinal angiomatous proliferation, age-related macular degeneration, optical coherence tomography.

RESUMEN

Caso clínico: Paciente varón de 81 años con proliferación angiomatosa retiniana (PAR) en estadio 2 identificado mediante angiografía fluoresceínica y tomografía de coherencia óptica (OCT) y con agudeza visual (AV) de 20/40. Una semana tras la inyección intravítrea de bevacizumab (1,25 mg), la AV mejoró a 20/25, y la OCT demostró reducción del edema intrarretiniano y del desprendimiento del epitelio pigmentario. Tres meses tras la inyección no se detectó ninguna complicación a nivel ocular, la AV era de 20/20 y la OCT mostraba un contorno macular prácticamente normal.

Discusión: La inyección intravítrea de bevacizumab puede aportar una nueva opción terapéutica para los pacientes con PAR.

Palabras clave: Bevacizumab, inyección intravitrea, proliferación angiomatosa retiniana, degeneración macular asociada a la edad, tomografía de coherencia óptica.
INTRODUCTION

Retinal angiomatous proliferation (RAP) is a type of age-related macular degeneration (ARMD) which characteristically presents a negative evolution and for which there is no proven efficient treatment (1). The treatment of RAP remains difficult. When the vascular complex has been established, it is infrequent to obtain anatomical closure.

RAP is a type of hidden neovascularization described for the first time in 1992. Its prevalence is estimated in the area of 10-15% of all neovascularization patients in the context of ARMD. Some series such as that of Coleman indicated that this percentage rises to 21% (1). RAP usually appears in elderly patients in the eighth decade of their lives. The clinical symptoms are similar to those appearing in other forms of ARMD neovascularization. In addition, it generally expresses bilaterally and in juxtafoveal localization. The most characteristic funduscopic alteration is the detachment of the retinal pigmentary epithelium (RPE), which may appear since stage 2 of the disease and becoming neovascularized in stage 3 to constitute a retinal choroidal anastomosis. Fluorescein angiography contributes to the diagnostic, but angiography with indocyanine green is the best method to determine RAP.

A number of therapies have been tested with low rates of success in the published series (1). Direct photocoagulation on extrafoveal lesions in early stages one and two may provide good results, but this localization is infrequent. Mediocre results have been attained after the application of photodynamic therapy associated to intravitreous injection of triamcinolone acetonide. The juxtascleral injection of anecortave is minimally effective, but its results are improved when combining it with photodynamic therapy. When detachment is associated to RPE, the success rates of all therapies fall dramatically.

Bevacizumab (Avastin, Genentech) is an anti-VEGF (vascular endothelial growth factor) humanized recombinant monoclonal antibody which joins all the isoforms of VEGF-A and which has been proven to provide good results in the treatment of ARMD (3,5).

This paper describes the effect of a single intravitreous injection of bevacizumab (1.25 mg) in a patient with retinal angiomatous proliferation.

CASE REPORT

An 81 year-old male attended our service with a best corrected visual acuity (BCVA) of 20/40 associated to perception of intense metamorphopsia in the right eye beginning several weeks before. The slit lamp exploration revealed vascular anomalies of RAP which were identified by means of fluorescein angiography (FA) (fig. 1) and optical coherence tomography (OCT) (fig. 2), showing a RAP in stage 2. No indocyanine green angiography was performed.

One week after the intravitreous injection of bevacizumab (1 mg), the BCVA of the patient improved to 20/25, with a substantial attenuation of the metamorphopsia perception, with OCT showing a reduction of macular thickness, the intraretinal oedema and the retinal pigmentary epithelium detachment (RPED) (fig. 3) (from 738 µm to 332 µm).

Four weeks later, the patient exhibited a BCVA of 20/20 and the OCT revealed a marked reduction in the thickness of RPED (from 332µ to 157µ).

Three months after the injection, no ocular complication could be detected, VA was of 20/20 and the OCT showed a practically normal macular contour (fig. 4).
DISCUSSION

Photodynamic therapy with verteporfin (PDT) can be effective for neovascular ARMD with RAP and a small retinal pigmentary epithelium detachment (RPED). However, it can cause a rupture of the RPE when the RPED size exceeds 50% of the total size of the lesion (2).

Bevacizumab (Avastin, Genentech) is an anti-VEGF recombinant humanized monoclonal antibody which was initially approved for treating metastatic colon cancer. Studies utilizing the off-label IV injection of bevacizumab for neovascular ARMD have shown promising initial results (3). The intravitreous use of bevacizumab has been published recently, with improved results and exhibiting a good safety profile (4,5).

This is the first paper on intra-vitreous injection of bevacizumab for treating retinal angiomatous proliferation. Four weeks after the injection of 1.25 mg of bevacizumab, the vision improved and the OCT revealed a reduction of macular thickness, both of the intra-retinal oedema and the pigmentary epithelium detachments. The functional and anatomic results improved throughout the three-month follow up period to reach characteristics close to normal.

The intravitreous injection of bevacizumab could provide an effective, safe and low cost treatment option for managing patients with retinal angiomatous proliferation.

REFERENCES