

SPONTANEOUS RESOLUTION OF IDIOPATHIC MACULAR HOLE TYPE IV: OPTICAL COHERENCE TOMOGRAPHY FOLLOW-UP

CIERRE ESPONTÁNEO DE UN AGUJERO MACULAR IDIOPÁTICO TIPO IV: SEGUIMIENTO MEDIANTE TOMOGRAFÍA DE COHERENCIA ÓPTICA

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ABSTRACT

Case report: A fifty-five year old patient with visual loss in the left eye was diagnosed to have a complete idiopathic macular hole. After a three-week observational period, spontaneous resolution of the macular hole was observed with vision recovery, all of this clearly demonstrated by optical coherence tomography (OCT).

Discussion: Spontaneous resolution of the idiopathic macular hole is infrequent (3-6%). OCT follow-up enabled monitoring of the closure mechanisms. Complex surgery was avoided by a short observational period (*Arch Soc Esp Oftalmol* 2006; 81: 229-232).

Key words: Idiopathic macular hole, OCT, spontaneous resolution.

RESUMEN

Caso clínico: Paciente varón de 55 años que acude por pérdida de visión en ojo izquierdo, diagnosticándose de agujero macular idiopático estadio IV. Tras un período de observación de 3 semanas se produce el cierre espontáneo del agujero macular con recuperación de la visión, todo ello bien documentado mediante tomografía de coherencia óptica (OCT).

Discusión: El cierre espontáneo de un agujero macular idiopático es poco frecuente (3-6%). El seguimiento mediante OCT permite visualizar los mecanismos de reparación a nivel retiniano. Un período corto de observación nos puede evitar una intervención quirúrgica compleja y laboriosa.

Palabras clave: Agujero macular idiopático, OCT, cierre espontáneo.

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INTRODUCTION

The macular hole Type IV is characterized by the presence of a defect larger than 400 microns in the macular area associated to a complete separation of the retina posterior hyaloids (1), loss of visual acuity and central scotoma.

Descriptions of the spontaneous closure of a type II and IV macular idiopathic macular hole are not frequently found and are associated in most cases to the presence of a posterior vitreous detachment (2).

Eric Ezra et al (3), comparing the results of treating the complete idiopathic macular hole by surgery vs. observation, concluded that 11.5% of idiopathic macular holes type II close spontaneously in the 3-6 months after diagnostic, whereas in Types III and IV this occurs only in 3-6% of cases. In addition, it is estimated that visual acuity improvement is slight, only in 3-10% of cases, and even worsens in the first months.

This communication presents the case of a complete idiopathic macular hole Type IV, well documented by optic coherence tomography (OCT), with a spontaneous closure thereof 20 days after diagnostic, with full recovery of visual acuity.

CASE REPORT

A 55-year old man who visited our ophthalmology service in November 2004, whose history did not reveal anything of interest. He referred a progressive loss of visual acuity in the RE (right eye) with a central scotoma with 10 days of evolution. The exploration revealed a corrected visual acuity in the RE of 0.2 and in the LE (left eye) of one unit. The Amsler grid revealed a central scotoma with pericentral metamorphopsies in the RE. An eye fundus was made and the macular exam with a 78D lens revealed an image like a complete macular hole with associated posterior vitreous detachment without sub-retinal liquid on the edges (fig. 1). The Watzke-Allen test gave positive results. The LE eye fundus was normal. Subsequently, an OCT study was made of the macular hole, which confirmed the presence of a complete macular hole with a horizontal diameter of 450 microns and a small intraretinal cyst on one of its edges (fig. 2). The OCT image does not display the separation of the posterior hyaloids which was evident in the funduscopy study.



Fig. 1: Complete macular hole type IV upon diagnostic.

The patient returned three weeks after the first visit and referred an important improvement of visual acuity and of the central scotoma. The improved corrected visual acuity of the RE is of 0.6, and the eye fundus revealed a closure of the macular hole. The Watzke-Allen test was negative. The OCT study confirmed the spontaneous closure and revealed a small retina pigmentary epithelium bridge and neuro-sensory retina external layers over a sub-retinal cystic area (fig. 3).

Three months later, the patient remained without symptoms and a visual acuity in the RE of 1. The OCT showed a complete restoration of the macular morphology with a slight thickening of the retina pigmentary epithelium at the foveal level (figs. 4 and 5).

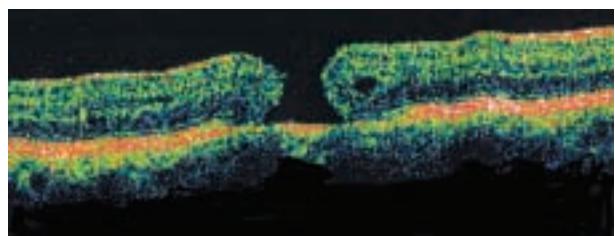


Fig. 2: OCT of the macular hole upon diagnostic showing a complete defect of the nervous fiber layer at the macular level, without signs of traction, confirming the presumption of complete macular hole.

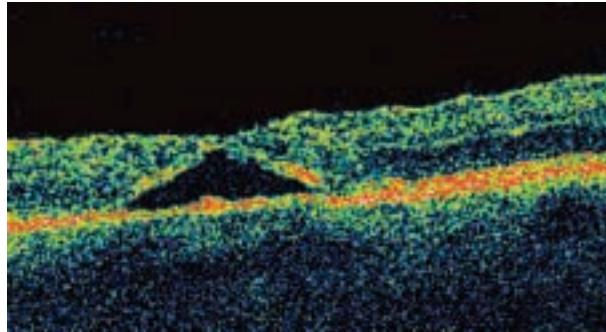


Fig. 3: OCT of the macular hole three weeks after diagnostic. A small neuro-sensory retina bridge can be seen over a sub-retinal cystic area.

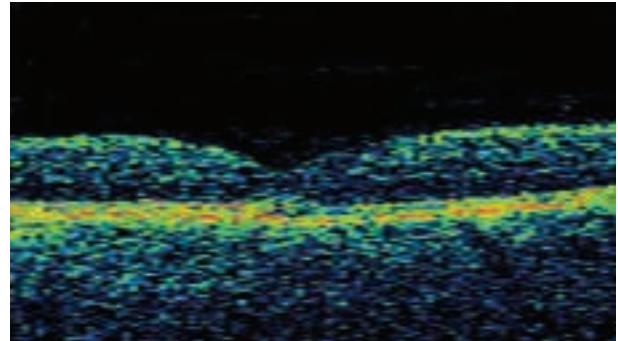


Fig. 5: Macular OCT after three months, evidencing a restoration of the macular morphology, with a small thickening of the pigmentary epithelium at the foveal level.

DISCUSSION

The spontaneous closure of a complete idiopathic macular hole is infrequent, with poor visual recovery (3). Small macular holes (50-150 µm diameter), occur mainly due to an acute vitreous posterior detachment over the fovea. Generally, the visual prognosis is positive because the majority of cases maintain or improve their anatomical structure and visual acuity (4). In this case, although the macular hole exhibits a larger diameter, the anatomical and functional recovery is complete.

Four mechanisms have been proposed to explain the spontaneous closure of a traumatic macular hole (5). These are:



Fig. 4: Eye fundus image after three months. No remains of the macular hole can be seen.

- Complete detachment of the posterior hyaloids over the fovea, thus avoiding the traction forces.

- Cellular proliferation at the base of the hole.
- Formation of an epi-retinal membrane.
- Formation of a retinal bridge over the hole.

In the instant case, the OCT reveals the appearance of an EPR bridge with some neuro-sensory retina external layers over an empty sub-retinal area. This mechanism has been described in traumatic macular holes and occurs because, in the internal layers of the retina, the presence of a repairing glial tissue is presumed, which executes centripetal traction and attracts the margins of the hole, both tangentially and horizontally. The OCT image displays a hyper-reflective band corresponding to a duplication of the EPR-Bruch's membrane-chorio-capillar complex, about which two hypotheses are entertained: glial proliferation or EPR growth from the growing neuro-sensory tissue (5).

Accordingly, in complete idiopathic macular holes of small size and with acceptable visual acuity, a full study should be made of the case before considering complex and laborious surgery on the patient.

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