Case reports: Three cases of pigmentary epithelial tears are described in this study. One of them was related to previous extrafoveal photocoagulation, whereas the other two were idiopathic. Fluorescein angiography (FA) and optical coherence tomography (OCT) were performed to confirm the clinical diagnosis.

Discussion: Few studies using OCT to assess pigmentary retinal epithelial (RPE) tears have been published in the world literature. The main findings of our study included hyper-reflectant line breaks, choroidal hyper-reflectance due to the lack of RPE and RPE double layering where it was folded. Images were frequently associated with RPE tears and neurosensorial retinal detachment (Arch Soc Esp Oftalmol 2007; 82: 245-250).

Key words: RPE tear, OCT, RPE detachment, age-associated macular degeneration.
INTRODUCTION

Serous detachment of the retinal pigmentary epithelium (RPE) is a frequent occurrence in exudative age-related macular degeneration (ARMD). A frequent complication is the RPT tear, which causes of sudden reduction of vision with a bad prognosis (1,2). This communication presents the results of a study with OCT and FAG in three patients with RPE tear and exudative ARMD.

CASE REPORTS

Case 1

A 79-year-old pseudophakic woman who attended the urgency practice due to visual acuity reduction in the right eye (RE), dated two months back. The VA was of 0.2 and the eye fundus had a central region with RPE, and an adjacent opaque area with superior temporal raising compatible with RPE tear. FAG showed the central transmission hyperfluorescence with nasal hot stop and another superior temporal hypofluorescence (figs. 1A and B). The OCT examination revealed hyper reflectiveness of the choroids due to absence of RPE in the nasal area, double RPE strip, hyporeflective areas caused by intra- and sub-retinal edema (figs. 1 C and D). Two photodynamic therapy sessions were performed with verteporfin, with a good initial response (VA 0.3), but three months after the second treatment, done the VA had gone down again to finger counting, with the eye fundus showing a disc-shaped macular scar.

Case 2

An 82-year-old male without relevant history, who attended the urgency practice due to VA reduction in the right eye, which started three days before. Upon exploration, VA was of 0.2, the Eiffel does show abroad area of temporal atrophy and a dark

Fig. 1: Case #1. A. Retinography: central area with atrophy and superior temporal raising. B. fluorescein angiography: central transmission hyperfluorescence with nasal hotspot (small arrow), temporal superior hypofluorescence (large arrow). C and D. optic coherence tomography, from nasal (N) to temporal (T).
area of RPE detachment, compatible with RPE tear. The FAG confirmed the diagnostic, showing early hyperfluorescence in the atrophic temporal area and in the middle of the central hypofluorescent area. In the late stages the intensity and diffusion increased (figs. 2 A-C). The OCT clearly showed the RPE tear. In the hyper-reflect of the choroids due to absence of RPE there was hyporeflectiveness on it, due to the neurosensory detachment. In the nasal area, double RPE strip and RPE elevation with underlying hyporeflectiveness due to the RPE detachment (figs. 2 D and 3). The patient declined any treatment. Two months later, the VA had gone down to hand movements, 4 months later. It was light perception and projection, with the eye fundus showing an organized vitreous hemorrhage.

Case 3

A 78-year old woman with a history of laser photocoagulation due to diabetic macular edema and soft drusen in both eyes. She attended the urgency practice and due to reduction of vision and the FAG showed a small extrafoveal neovascular membrane, which was treated with laser photocoagulation with a good initial results (the VA improved from 0.1 to 0.3). Six months later, the day had gone down to 0.05, and the eye fundus showed a nasal atrophic adjacent to a dark area of raising and folds, which suggested an RPE tear. FAG and OCT confirmed that the diagnostic (fig. 4). The treatment was established, with the VA at the last exploration six months later, giving a value of 0.02.

Fig. 2: Case #2. A. Retinography: temporal atrophy, central raising. B and C. Fluorescein angiography: Hyperfluorescence with late diffusion (black arrow), central hypofluorescence (white arrow). D. Optic Coherence Tomography from temporal (T) to nasal (N).
DISCUSSION

RPE tear is a severe complication of age related macular degeneration (ARMD), which may occur spontaneously or after frequently associated neovascularization treatments: laser photocoagulation, photodynamic therapy, intravitreous pegaptanib (1-3). This must be differentiated from atrophic ARMD or subretinal neovascularization (1). FAG and in recent years OCT have proved to be very useful for diagnosis (1-5). Angiographically, transmission hyperfluorescence produced by the uncovered choroids and the fluorescence blocking due to retracted RPE is typical. Both areas are separated by a well-defined line, which is the free aged over the retracted RPE.

In addition, there is a frequent detachment of RPE or neurosensory (figs. 1-3).

Fig. 3: Case #2. Optic Coherence Tomography: at the left of the image, deep hyper-reflectiveness in the area without retinal pigmentary epithelium (RPE), interruption of the RPE (large arrow), irregular RPE detachment (small arrow), neurosensory detachment (asterisk).

Fig. 4: Case #3. A. Retinography: microhemorrhage, nasal atrophy, central raising with folds, laser scarring. B and C. Fluorescein angiography: nasal hyperfluorescence (black arrow), laser scar (white arrow) central hypofluorescence. D. Optic coherence tomography of temporal (T) to nasal (N): central hyper-reflectiveness, interruption of the pigmentary epithelium, deep nasal hyper-reflectiveness.
There are very few publications about OCT in RPE tear. Giovannini (5), published in 2000 the most numerous series of 16 patients studied with this technique. OCT was able to identify a pigmen-
tary epithelium, detachment having a peculiar non-
cupola shape, with interruption of the RPE strip in all cases. The naked choroids exhibited a deep hyper-reflectiveness due to the greater penetration of the beam in the absence of the RPE screen. The retracted RPE exhibited intense hyper-reflectiveness due to the duplication of the layer. In our three patients these findings can be appreciated. In case number two with a very few days of revolution, OCT shows the irregular detachment of the RPE in addition to a neurosensory detachment in relation to a hidden neovascular membrane (fig. 3). The remaining two patients had several months of abortion, and therefore these findings are less striking although also sizeable (figs. 1 and 4). Giovannini (5) observed the absence of scars in the neurosensory detachment, as the only difference between the severe and cicatricial stage.

The authors consider that OCT is a very useful technique for the diagnostic and follow up of patients with RPE tear and exudative ARMD.

REFERENCES