Author’s response to reviews

Title: Management of significant reactivation of old disciform scars in wet Age-Related Macular Degeneration

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Management of significant reactivation of old disciform scars in wet Age-Related Macular Degeneration

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Abstract

Background. To describe the clinical outcomes of 10 patients with late still active and significant increasing in size disciform scars secondary to Age-Related Macular Degeneration (AMD), who underwent Indocyanine Green angiography (ICG) examination and focal laser photocoagulation of the “hot spots” (HS) found.

Case presentation. In 10 out of 11 patients with the described clinical feature, a treatable HS was found on the ICG at the border of the disciform scar. Those were treated with focal laser. All 10 treated patients become inactive after treatment, though 2 presented reactivation again after few months that needed retreatment.

Conclusions. Those patients with an active disciform scar should be studied by ICG to look for HS since the performance of this test is high. These patients could benefit of focal laser, to stabilize the disease and avoid further complications such as massive subretinal haemorrhages that would limit their quality of life. These patients probably have the polipoidal subtype of AMD.

Keywords: age-related macular degeneration, disciform scar, indocyanine green angiography, laser photocoagulation.
Introduction

Fibrotic disciform scars are the latest stage of wet Age-Related Macular Degeneration (AMD) and ophthalmologists tend not to treat in such cases. Nevertheless, a reactivation of a marginal area of the disciform scar can occur sometimes and thereafter not only the patient’s scotoma increases but also further complications can occur such as massive subretinal haemorrhage with subsequent additional limitation of the quality of life of such patients.

Laser photocoagulation (LPC) was the first treatment to treat progression of neovascular membranes secondary to AMD. Due to new antiangiogenic treatments, this therapy is no longer mostly used. The indication of laser treatment remains only in few AMD cases (extrafoveal membranes). A reactivation of the marginal area of a disciform scar would be a very special type of extrafoveal membranes, in which the focal laser treatment could be indicated.

We report 10 patients with a reactivation of their disciform scar who underwent an Indocianin green (ICG) exam and a “hot spot” was seen on it. All patients were treated with focal laser in order to control the lesion growing. Treatment succeeded inactivating the lesion in all treated patients, though 2 presented reactivation again after few months that needed retreatment. Visual Acuity did not increase nor decrease along follow up in any treated patient. To our knowledge this is the first report about the management of disciform scar reactivations by using ICG + focal LPC.

Case Reports

Patient 1
A 75-year-old female presented a reactivation of the disciform scar on her left eye (LE). Presented a serous pigment epithelium detachment (PED) with subretinal haemorrhage and lipidic exudation.

Patient 2
A 71-year-old female presented a reactivation on her right eye (RE). Presented a PED with a large area of lipidic exudation. The area treated was active after 3 months and needed another session of focal laser. Four months later the lesion was inactive with no PED and a decrease of exudation.

Patient 3
A 65-year-old female presented a reactivation on her LE. Presented a small area of lipidic exudation with no PED nor subretinal haemorrhage.

Patient 4
A 77-year-old male presented a reactivation on his LE. Presented a large serous PED with lipidic exudation. The treated area looked better but remained active 3 months after treatment, and presented for the first time inactive 8 month after treatment. A new reactivation one year later required another session of laser.
Patient 5
A 69-year-old male presented a reactivation on his LE. Presented a haemorrhagic PED.

Patient 6
A 75-year-old female presented a reactivation on her RE. Presented a large subretinal haemorrhage with lipidic exudation.

Patient 7
A 76-year-old male presented a reactivation on his RE. Presented two serous PED’s with lipidic exudation around. The area treated remained active 3 months after and looked completely inactive 7 months after treatment. A new reactivation was seen 5 months later but it was in a new marginal area of the disciform scar. The area previously treated remained inactive.

Patient 8
An 86-year-old female presented a reactivation on her LE. Presented a large serous-haemorrhagic PED.

Patient 9
A 79-year-old male presented a reactivation on his LE. Presented peripapillary subretinal haemorrhages.

Patient 10
A 80-year-old female presented a reactivation on her LE. Presented a large subretinal haemorrhage with a PED.

Comment
Age-Related Macular Degeneration (AMD) is the main cause of legal blindness among the population older than 65 years in developed countries. Those AMD patients presenting a reactivation of a previously inactive disciform scar must be carefully observed. If an increase in size of the lesion, with a serous PED, an extensive area of haemorrhage or active lipidic exudation is observed in the margin of a disciform scar, an ICG examination should be considered. If a HS is seen on it, patients would benefit of focal LPC. It helps to stabilize the disease, possibly avoiding additional complications such as massive haemorrhage, which would compromise further the quality of life of those patients.

We think some of these patients, mainly the ones presenting serous or haemorrhagic PEDs, could have polypoidal lesions not previously diagnosed. The number of patients in which a HS has been found in our series encourages keeping on performing the ICG in such a kind of patients, as most of the studied patients presented a treatable HS. This is a new association or variations in disease processes or management, as disciform scars tend not to be treated anymore.
Some authors proposed the use of subretinal coapplication of rtPA and bevacizumab followed by repeated intravitreal anti-VEGF injections for neovascular AMD with submacular haemorrhage, but none of our patients had a submacular central bleeding. Instead, they had marginal reactivations of the lesion.

**Conclusions**

Performing ICG study should be considered in those patients with an active disciform scar in order to look for HS since the throughput of this test is high. These patients could benefit of focal laser, to stabilize the disease and avoid further complications such as massive subretinal haemorrhages that would limit their quality of life by decreasing vision in patients that already had severe low vision. These patients probably have the polipoideal subtype of AMD.

**Consent**

A written informed consent was obtained from all patients for publication of this case report.

**Competing interests**

The authors declare that they have no competing interests.

**Authors’ contributions**

AS reviewed the patient’s charts. Both authors wrote the manuscript. RMC reviewed the manuscript. Both authors read and approved the final manuscript.

**References**


**Figure 1. Fundus images from Patient 7.**

a. Fundus colour retinography of a disciform scar previous to the reactivation.

b. Fundus colour retinography showing the reactivation of a disciform scar at its superotemporal margin with 2 big serous PEDs and lipidic exudation.

c. The Indocyanine Green angiography shows a “hot spot”

d. Active lesion 3 months after treatment.

e. Inactive lesion 7 month after treatment. PEDs and exudates had completely disappeared.

f. Reactivation of a new area (haemorrhage at the inferior margin) of the disciform scar one year after treatment.

**Figure 2. Fundus images from patient 10.**

a. Fundus colour retinography of a disciform scar previous to the reactivation.

b. Fundus colour retinography showing the reactivation of a disciform scar at its inferotemporal margin with a big subretinal haemorrhage.

c. The Indocyanine Green angiography shows a “hot spot”.

d. Inactive lesion 9 month after treatment. The subretinal haemorrhage had completely disappeared.
Table 1. Treatment outcome of the 10 treated patients.

<table>
<thead>
<tr>
<th>Patient</th>
<th>Previous Treatments Yes/No</th>
<th>Type and number of previous treatments (Number)</th>
<th>Period of time in which lesion became inactive after LPC (number of treatment sessions)</th>
<th>Total time of follow up remaining inactive after reaching complete inactivation</th>
<th>Reactivation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No</td>
<td></td>
<td>2 months (1)</td>
<td>19 months</td>
<td>No</td>
</tr>
<tr>
<td>2</td>
<td>Yes</td>
<td>Ranibizumab IV (4)</td>
<td>7 months (2)</td>
<td>No more follow up</td>
<td>No</td>
</tr>
<tr>
<td>3</td>
<td>Yes</td>
<td>PDT (3), LPC (1)</td>
<td>2 months (1)</td>
<td>21 months</td>
<td>No</td>
</tr>
<tr>
<td>4</td>
<td>Yes</td>
<td>LPC (1), PDT (3), TTT (1), Ranibizumab IV(3)</td>
<td>8 months (1)</td>
<td>12 months</td>
<td>Yes (in the same area)</td>
</tr>
<tr>
<td>5</td>
<td>Yes</td>
<td>PDT (1), LPC (1)</td>
<td>3 months (1)</td>
<td>17 months</td>
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<tr>
<td>6</td>
<td>Yes</td>
<td>LPC (2), PDT (1)</td>
<td>3 months (1)</td>
<td>No more follow up</td>
<td>No</td>
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<tr>
<td>7</td>
<td>Yes</td>
<td>Ranibizumab IV (2)</td>
<td>7 months (1)</td>
<td>23 months</td>
<td>Yes (in a different area)</td>
</tr>
<tr>
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<td>No</td>
<td></td>
<td>5 months (1)</td>
<td>27 months</td>
<td>No</td>
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<td>TTT (1)</td>
<td>3 months (1)</td>
<td>12 months</td>
<td>No</td>
</tr>
<tr>
<td>10</td>
<td>Yes</td>
<td>PDT (1), Ranibizumab IV (1)</td>
<td>3 months (1)</td>
<td>9 months</td>
<td>No</td>
</tr>
</tbody>
</table>

IV: intravitreal; PDT: Photodynamic therapy; LPC: Laser photocoagulation; TTT: Transpupillary thermotherapy.