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### **Short communication**

# Recurrent neurosensory macular detachment in carotid-cavernous fistula<sup>☆</sup>



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### ARTICLE INFO

### Article history: Received 1 August 2013 Accepted 18 March 2014 Available online 13 August 2015

#### Keywords:

Palabras clave:

Carotid-cavernous sinus fistula
Dural arteriovenous fistula
Neurosensory detachment
Macular detachment
Serous macular detachment

#### ABSTRACT

Case report: A 46 year-old man was seen in the emergency department complaining of vision loss and exophthalmos in his right eye. He also complained of headache, diplopia of 4 months onset, and neurosensory detachment that resolved spontaneously the month before. The study revealed tortuous conjunctival and episcleral vessels and neurosensory macular detachment in his right eye. A carotid-cavernous fistula was confirmed by computed tomography angiography. The fistula closed spontaneously during the hospitalization. One month later, the neurosensory detachment disappeared again.

Discussion: Carotid-cavernous fistula should be included in the differential diagnosis of neurosensory macular detachments. These neurosensory detachments can resolve spontaneously 11 the fistula is closed.

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### Desprendimiento neurosensorial macular recurrente en fístula carótido-cavernosa

### RESUMEN

Fístula carótido-cavernosa
Fístula arteriovenosa dural
Desprendimiento neurosensorial
Desprendimiento macular
Desprendimiento seroso macular

Caso clínico: Varón de 46 años, acudió a Urgencias por disminución de agudeza visual y exoftalmos en ojo derecho. Aquejaba cefalea, diplopía de 4 meses de evolución e historia de desprendimiento neurosensorial (DNS) resuelto espontáneamente un mes antes. Presentaba tortuosidad de vasos conjuntivales y epiesclerales y nuevo DNS macular derecho. La sospecha de fístula carótido-cavernosa quedó confirmada mediante angiotomografía computarizada (angio-TC). Durante su ingreso la fístula se cerró espontáneamente. Al mes, el DNS había desaparecido.

<sup>\*</sup> Please cite this article as: de Dompablo E, Díez-Álvarez L, Ruiz-Casas D, Sánchez-Gutiérrez V, Ciancasa E, González-López JJ. Desprendimiento neurosensorial macular recurrente en fístula carótido-cavernosa. Arch Soc Esp Oftalmol. 2015;90:331–334.

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Discusión: La fístula carótido-cavernosa debe incluirse en el diagnóstico diferencial de los DNS maculares. El DNS puede desaparecer espontáneamente al cerrarse la fístula.

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### Introduction

Carotid-cavernous fistulae (CCF) are abnormal communications between the arterial system and the cavernous sinus. The presentation of this disease is highly variable. Frequently, patients consulted due to headache and symptoms derived from orbitary congestion, although they could also exhibit loss of vision.

A case report is presented of a patient with CCF who exhibited recurring macular neurosensory detachments (NSD) which were resolved completely after the spontaneous closure of the fistula.

### **Case report**

Male, 46, with history of vitiligo and recent dental infection who presented with cephalea, tinnitus and diplopia with one month evolution. Visual acuity (VA) was 1 in both eyes, and biomicroscopy did not reveal alterations. Ocular fundus (OF) showed parafoveal retina pigment epithelium detachment (PED) in the right eye (RE) (Fig. 1). Cranial computerized tomography was requested to discard complicated acute middle ear keratitis (Gradenigo syndrome) with negative results.

One month later, the patient visited due to scotoma in RE and worsening diplopia. VA was 0.2 in RE and 1 in left eye (LE). Anterior segment did not exhibit anomalies, while funduscopy showed macular NSD in RE. Optic coherence tomography and fluorescein angiography were performed (Cirrus-OCT®, Carl-Zeiss Medictec Inc., Dublin, CA) (Fig. 2) which confirmed exploration findings. The patient was diagnosed with central serous chorioretinopathy. Full analyses were requested,

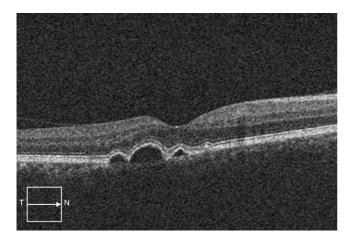


Fig. 1 – Optic coherence tomography centered on the right eye fovea in the first visit showing three retina pigment epithelium detachments.

including VSG and PCR. At the three-week checkup the patient referred improvement in symptoms, RE VA was of 0.5 while OF showed spontaneous subretinal fluid reduction (Fig. 3).

Two months later, the patient experienced a new worsening of diplopia and vision, exhibiting ptosis, exophthalmos and ophthalmoplegy in the RE. VA was 0.1 in the RE and 1 in the LE. Biomicroscopy revealed medusahead conjunctival vessels while the right OF showed reappearance of PED, NSD and macular intraretinal fluid without peripheral alterations (Fig. 4).

Emergency angio-CT confirmed the presence of right CCF (Fig. 5). During admission for embolization the fistula closed spontaneously, making treatment unnecessary. One month

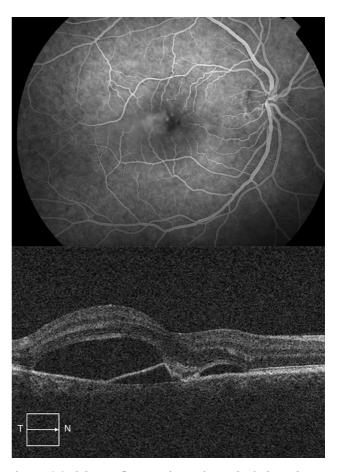


Fig. 2 – (A) Right eye fluorescein angiography in late phase, coinciding with the loss of vision in the same eye. Contrast leak can be observed in relation to retina pigment epithelium detachments and neurosensory detachment in the perimacular area. (B) Right eye optic coherence tomography centered on the fovea at the same time, showing neurosensory detachment in the macular area together with subfoveal pigment epithelium detachments.

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