PARANEOPLASTIC OPTIC NEURITIS IN AN UNKNOWN SMALL CELL LUNG CARCINOMA DEFINED BY CRMP-5-IgG

NEURITIS ÓPTICA PARANEOPLÁSICA EN CARCINOMA MICROCÍTICO PULMONAR DESCONOCIDO DEFINIDA POR MARCADOR CRMP-5-IgG

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ABSTRACT

Case report: The case of a 64-year-old patient with bilateral, progressive and painless diminution of visual acuity is presented. Ophthalmologic evaluation revealed optic neuritis and vitreous cells in both eyes, at different stages. Suspecting a paraneoplastic optic neuritis, the study of antibodies was requested. This showed positivity to the marker CRMP-5-IgG. After mediastinoscopy, a small cell lung carcinoma was diagnosed.

Discussion: Autoantibody CRMP-5-IgG defines a paraneoplastic entity of combined optic neuritis and vitreous inflammatory cells. The serological positivity avoids the vitreous biopsy and expedites the search for cancer. In our case, it allowed the diagnosis a previously unidentified tumor (Arch Soc Esp Oftalmol 2007; 82: 777-780).

Key words: Optic neuritis, paraneoplastic, small cell, CRMP-5-IgG.
INTRODUCTION

The loss of subacute vision with papillitis and cells in vitreous entails a diagnostic problem because on many occasions the findings are identical for a variety of possible etiologies: ischemia, infection, infiltration, demyelination or paraneoplastic.

The paraneoplastic neurological syndromes are defined as neurological syndromes of unknown cause which frequently precede the diagnosis of an underlying tumor. In the last two decades the discovery that many paraneoplastic syndromes are associated to the existence of antibodies against antigens expressed by the tumor suggests that some of these syndromes involve the immune system (1). In this regard, two auto antibodies have been described for defining two of the most important paraneoplastic syndromes which involve the eye. These are: Cancer Associated Retinitis (CAR) with the marker CAR-IgG against the recoverine protein, and the Cancer Associated Neuritis whose marker is CRMP-5-IgG (also known as anti-CV2), against the protein which mediates the response of colapsine (2).

CASE REPORT

A sixty-year-old man who referred progressive and painless bilateral loss of vision involving the left eye (LE) which had started seven days before and in the last forty eight hours had also involved the right eye (RE). Relevant antecedents included heavy smoking and the death of a brother due to lung neoplasia. In the ophthalmological exploration we found a corrected visual acuity of 0.4 in the RE and hand movements in the LE. Intra-ocular pressure and anterior segment were normal, while the funduscoppy revealed moderate vitritis in both eyes with a slight hyperemia in the RE papilla and papillary paleness in the LE (fig. 1). It was decided to admit the patient for study with the initial diagnostic of bilateral papillitis with vitritis.

The neurological exploration as well as the hemogram and biochemical tests gave normal results. The chest X-ray revealed a slight thickening of the right luminary hilum (fig. 2), while the cranial CAT scan was normal. The lumbar punction only showed a discreet elevation of proteins. With these and result in hand it was decided to initiate treatment with corticoids and antiaggregants.

The angiofluorescein graph showed hypercapture in papilla without signs of vasculitis. The evoked potentials were normal in RE and compatible with axonal neuropathy in LE. The electroretinogram and brain magnetic resonance gave normal results. Serology, immunology and usual tumor markers were negative.

The results of the tests discarded an infectious, vascular or demyelinizing etiology. Therefore, an infiltration etiology was assessed together with a paraneoplastic syndrome. A chest and abdomen CAT scan was requested, which showed a 3 cm image in the right hilum compatible with adeno-
Paraneoplastic Optical Neuritis defined by CRMP-5-IgG

Fig. 2: Chest x-ray with a discreet thickening of the right hilum.

Fig. 3: Chest CAT scan showing a mess in the right hilum (Arrow).

In accordance with the above data, it was decided to cancel the PET study and carry out a mediastinoscopy which was reported as a pulmonary microcytic carcinoma. The oncology service classified it as a microcytic carcinoma in limited stage, setting up treatment with chemo- and radiotherapy.

The initial response to the corticoid treatment was good, with a VA improvement to 0.7-0.3 within a fortnight and reaching a final of visual acuity at six months (when the study was closed) of 0.8 in RE and 0.6 in LE, with a full reinstatement of the integrity of the funduscopy image (fig. 4).

DISCUSSION

Paraneoplastic syndromes appear in under 1% of cancer patients. The most frequently responsible tumor is the pulmonary microcytic tumor. It is believed that this tumor proceeds from Kulitschky cells of a neuroectodermic origin which, in their growth, can express anti-genes present in nervous cells or which cross react with anti-genes of the nervous system, thus stimulating the production of auto antibodies (4). This is the case of the anti-CRMP-5-IgG which has as target the molecule of the proteins which mediates the response to colapsine, a cytosolic phosphoprotein highly expressed during the development of the nervous system and of reduced expression in the adult to some sub-populations of oligodendrocytes and Schwann cells (5). Treatment with corticoids reduces the production of auto antibodies and reverts optic neuritis. Said marker only appears in 0.1% of patients with neurological symptoms, whereas of the CRMP-5-IgG positive patients only 7% exhibit neuritis (3). The association of the marker in blood plasma and optic neuritis comprises 93% of probabilities of exhibiting a malign tumor which, if existent, will be a pulmonary microcytic carcinoma in 66% of cases (2).

Positive serology avoids the need of carrying out a biopsy of the vitreous and facilitates the search for the cancer. In our case, it allowed the diagnosis of a tumor which was previously unknown.

REFERENCES

Fig. 4: Appearance of the eye fundus after six months, without significant findings.


