Short communication

Bilateral serous retinal detachments associated with IgA nephropathy

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ABSTRACT

Case report: A 41-year-old woman with a bilateral loss of visual acuity and a history of IgA nephropathy. The ophthalmic examination revealed bilateral neurosensory detachments that resolved completely after 4 months of peritoneal dialysis.

Discussion: Bilateral serous retinal detachments are a rare manifestation of IgA nephropathy, in which the etiology is probably multifactorial and their resolution depends on the underlying disease.

Desprendimientos de retina serosos bilaterales asociados a glomerulonefritis primaria por depósito de Inmunoglobulina A

RESUMEN

Caso clínico: Mujer de 41 años de edad con disminución de la agudeza visual bilateral y antecedentes de enfermedad glomerular primaria por depósito de IgA. A la exploración oftalmológica presentaba desprendimientos de neuroepitelio bilaterales que se resolvieron por completo tras 4 meses de diálisis peritoneal.

Discusión: Los desprendimientos de retina serosos bilaterales son una manifestación rara de la nefropatía IgA, cuya etiología es probablemente multifactorial y cuyo tratamiento es el de la enfermedad de base.

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**Introduction**

Serous or exudative detachments are related to a broad range of vascular, inflammatory and neoplastic conditions involving the neuroepithelium, pigment epithelium and the choroids. Some cases have been described, including complicating nephrotic syndromes secondary to diabetes or to neoplastic disorders. However, there are very few published cases involving primary glomerular disease.

Primary glomerulonephritis due to IgA deposits, Berger’s disease or IgA nephropathy are the most common forms of primary glomerulonephritis all over the world. Histologically, glomerulonephritis is characterized by IgA deposits in the glomerular mesangium, although data points to a systemic disease, i.e., high levels of IgA in blood, recurrence in 35% of kidney transplants and association with other diseases due to IgA deposits on the skin (Schönlein–Henoch purpose), the intestine (chronic intestinal inflammatory disease) or the episclera, as found by Sirbat et al. in the episcleral biopsy of patients with IgA nephropathy and numerous repetition episcleritis.

In most cases, the initial expressions are recurrent hematuria episodes. Nephrotic syndrome occurs in only 5% of cases, characterized by the formation of peripheral edema, proteinuria above 3.5 g/24 h/1.73 m², hypoalbuminemia below 3.5 g/dl, hypercoagulability and hyperlipidemia.

Ocular expressions are also frequent, the most common being uveitis, followed by episcleritis and scleritis, retinal vasculitis, serous retina detachment, uveal effusion syndrome and Vogt–Koyanagi–Harada syndrome.

An infrequent case of bilateral serous detachments associated to primary glomerular disease is presented.

**Case report**

Female, 41, with blurry vision and tearing in both eyes with several days evolution. Diagnosed 3 years earlier with IgA nephropathy, admitted due to influenza A with deteriorated renal function, after being treated with high doses of corticoids.

Ophthalmological exploration revealed a visual acuity of 0.2 in both eyes, 0.4 with stenopeic and intraocular pressure of 16 mmHg. Posterior biomicroscopy showed edematous retina in the right eye with macular edema and dotted fundus (Fig. 1A) with suprapapillary (Fig. 1B) and inferior periphery serous detachment; in the left eye, dotted retina with serous detachment at the level of the inferior temporal arch (Fig. 2C) and suprapapillary (Fig. 1D).

Optic coherence tomography was performed (CIRRUS HD-OCT [Carl Zeiss Meditec, Dublin, CA, USA]) which confirmed macular edema in the right eye with neuronsensory macular (Fig. 2A) and suprapapillary (Fig. 2B) elevation, and in the left eye neuronsensory macular (Fig. 2C) in the inferior temporal arch (Fig. 2D) and suprapapillary (Fig. 2E) elevation. Due to the presence of nephropathy, fluorescein angiography was not performed.

The systemic examination revealed bilateral maleolar edema, arterial hypertension and analytics compatible with nephrotic syndrome and advanced chronic kidney disease in stage 5. The Nephrology Dept. decided to perform kidney biopsy with the result of extracapillary proliferation with 2 half moons and 20–30% sclerosis in 7 of the 12 biopsied glomerulae. Based on these results, said Dept. opted for treatment with cyclophosphamide.

After resolving the infectious process and the administration of a first 1 g dose of intravenous (IV) cyclophosphamide, kidney function improved but with hardly any effect on proteinuria. As the ocular level, the subfoveal liquid disappeared from both eyes (Fig. 3) and diminished in the rest of locations. Subsequently, 2 additional doses of IV 1 g cyclophosphamide were administered at an interval of 4 weeks with poor systemic and ocular response, with subfoveal liquid reappearing in both eyes (Fig. 4). The immunosuppressant treatment was discontinued, corticoid therapy reduction was initiated and catheter implanted for peritoneal dialysis. After 4 months of dialysis, the retina was entirely reapplied with some fibrotic areas (Fig. 5A and B), the subretinal liquid and edema had disappeared (Fig. 5C and D) and visual acuity was 0.6 in both eyes.

**Discussion**

Serous or exudative retina detachments can be associated to systemic diseases, including inflammatory, infectious or collagen diseases, malign hematological diseases, hypercortisolism and kidney diseases. The mechanisms that try to explain this subretinal exudation are based on the alteration of choroidal vascular perfusion and permeability changes which determine an increase of the choroidal interstitial fluid that extends to the subretinal space.

In the case of IgA nephropathy, a proposed etiology is the potential local deposit of immune IgA complexes in ocular vessels as the cause of altered choroidal and retinal microcirculation. In the present case, we must add fluid retention associated to chronic kidney disease and nephrotic syndrome as well as previous treatments with high corticoid doses. After suppressing said therapy and establishing peritoneal dialysis, the retina reattached completely.

Accordingly, treatment for this type of detachments related to baseline systemic conditions largely depends on the internist. In the present case, kidney deterioration led to a new kidney biopsy, the result of which gave rise to cyclophosphamide treatment. With the first dose of said immunosuppressant, the ocular condition and kidney function improved significantly, in contrast with the nephrotic syndrome, which led the authors to think that retina detachments were not related only with the latter condition. However, despite receiving 2 new cyclophosphamide doses, both the ocular condition and kidney function deteriorated and the patient was referred for a return dialysis awaiting a kidney transplant and, when this liquid retention was resolved, retina detachments also resolved.

In conclusion, the most likely explanation for retina detachments in primary glomerular disease is multifactorial etiology, including chronic renal insufficiency and nephrotic syndrome, therapy with high doses of corticoids and a non-specific contribution of the baseline disease as, in the present
Fig. 1 – Ocular fundus at diagnostic. (A and B) Right eye: edematous dotted retina with prominent supra-papillary serous detachment. (C and D) Left eye: edematous dotted retina with serous detachment at the level of the inferior temporal arch and supra-papillary.

Fig. 2 – Optic coherence tomograph at diagnostic. (A and B) Right eye: macular edema with subfoveal neurosensory (A) and supra-papillary (B) elevation. (C–E) Left eye: macular neurosensory elevation (C), in inferior temporal arch (D) and supra-papillary (E).
Fig. 3 – Macular optic coherence tomograph after recovery of kidney function and first cyclophosphamide bolus, with the disappearance of subfoveal liquid in both eyes.

Fig. 4 – Macular optic coherence tomograph after new kidney function deterioration despite new intravenous cyclophosphamide bolus. New episode of bilateral macular neuroepithelium detachment and edema can be seen.

Fig. 5 – Images after 4 months of dialysis. (A and B) Retinographs of right (A) and left eye (B), showing reapplied dotted retina with some fibrosis areas. (C and D) Optic coherence tomographs of right (C) and left eye (D) showing the disappearance of intra-and sub-retinal fluid.
case, potential IgA deposits. The action of the internist is essential for treatment and therefore it is crucial to maintain a good communication between ophthalmologist and internist for the resolution of the condition described above.

Conflict of interests

No conflict of interests was declared by the authors.

REFERENCES