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Case Report

Purtscher-Like Retinopathy Secondary to Acute Pancreatitis: Case Report

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Abstract

Introduction: Purtscher Retinopathy has been described as a chorioretinopathy associated with indirect trauma, non-ocular injury. When typical retinal findings occur in total absence of trauma, the term Purtscher-Like Retinopathy is used. This has been associated with multiple clinical entities including acute pancreatitis, pancreatic adenocarcinoma, renal failure among others.

Objectives: To present the clinical case of a female patient with Purtscher-Like Retinopathy, who debuted with acute pancreatitis.

Case Report: We present a case of 55-year-old woman with sudden visual loss in both eyes after been admitted for a painful acute abdomen of 3 days, which was diagnosed as acute biliary pancreatitis. With a history of systemic arterial hypertension, hypothyroidism, scleroderma. Exploration: best corrected visual acuity of right eye 20/200 and left eye 20/200 at biomicroscopy no alterations were found. Indirect ophthalmoscopy shows cotton wool spots disperse in the fundus with thickening of the macular area compatible with localized serous detachment of the retina. The Purtscher-Like is takes importance since the visual prognosis is good, with a monthly observation the final of OD 20/60 and OS 20/25, but the life prognosis in this case was bad because of being associated with complications of pancreatitis and death at 2 months of the onset of symptoms.

Discussion: The treatment for this type of cases has been described in the literature with high doses of corticosteroids or observation, the latter used in this case, which achieved the improvement of the patient's visual acuity.

Keywords: *Purtscher Retinopathy; Purtscher Retinopathy; Acute Pancreatitis*

Abbreviations

PR: Purtscher Retinopathy; PLR: Purtscher-Like Retinopathy; OCT: Macular Optical Coherence Tomography; GMC: Central Macular Thickness; RFA: Retinal fluorangiography

Introduction

Purtscher Retinopathy (PR) was first described in 1910 by Otmar Purtscher in a man who fell from a tree and suffered cranial trauma. The author observed multiple abnormalities in the fundoscopic examination, including retinal hemorrhage and retinal bleaching, as-

sociated with decreased visual acuity. Since then, PR has been described as a chorioretinopathy associated with indirect trauma, non-ocular injury, associated with a constellation of retinal findings that include cotton wool spots, retinal hemorrhages, optic disc edema and Purtscher spots (areas of internal retinal whitening). The condition is more classically associated with compression trauma [1].

When typical retinal findings occur in total absence of trauma, the term Purtscher-Like retinopathy (PLR) is used. PLR has been associated with multiple clinical entities including acute pancreatitis, pancreatic adenocarcinoma [2], renal failure, preeclampsia and childbirth, connective tissue disorders, crush injury, fatty embolism, long bone fracture, orthopedic surgery, Valsalva maneuver and lifting of weights, lymphoproliferative disorders, bone marrow transplantation, barotrauma, steroid injections in and around the orbit such as in nostrils, retrobulbar anesthesia, hemolytic uremic syndrome, cryoglobulinemia, shaken baby syndrome. Because PLR and PR probably share a pathophysiological background, a common clinical presentation and treatment, they are often collectively referred to as "Purtscher Retinopathy". In a systematic review, they reported that the most associated condition was trauma followed by acute pancreatitis [3,4].

Objective of the Study

To present the clinical case of a female patient with PRL, who debuted with acute pancreatitis.

Clinical Case

55-year-old woman who is requested the interconsultation by Ophthalmology by sudden visual loss of both eyes with a systemic history of hypothyroidism, systemic arterial hypertension and scleroderma, with a diagnosis of acute biliary pancreatitis of three days evolution managed by the Internal Medicine Service. The ophthalmological examination with BCVA of 20/200 OD and 20/200 OS on Snellen scale, intraocular pressure 11 mmHg in both eyes, anterior segment without alterations, in posterior pole can be seen dispersed multiple cotton wool spots involving macular region with serous detachment of the retina in both eyes (Figure 1). Retinal fluorangiography (RFA) is performed where hyperfluorescence pattern is observed by leakage of dye around the cotton wool spots (Figure 2).

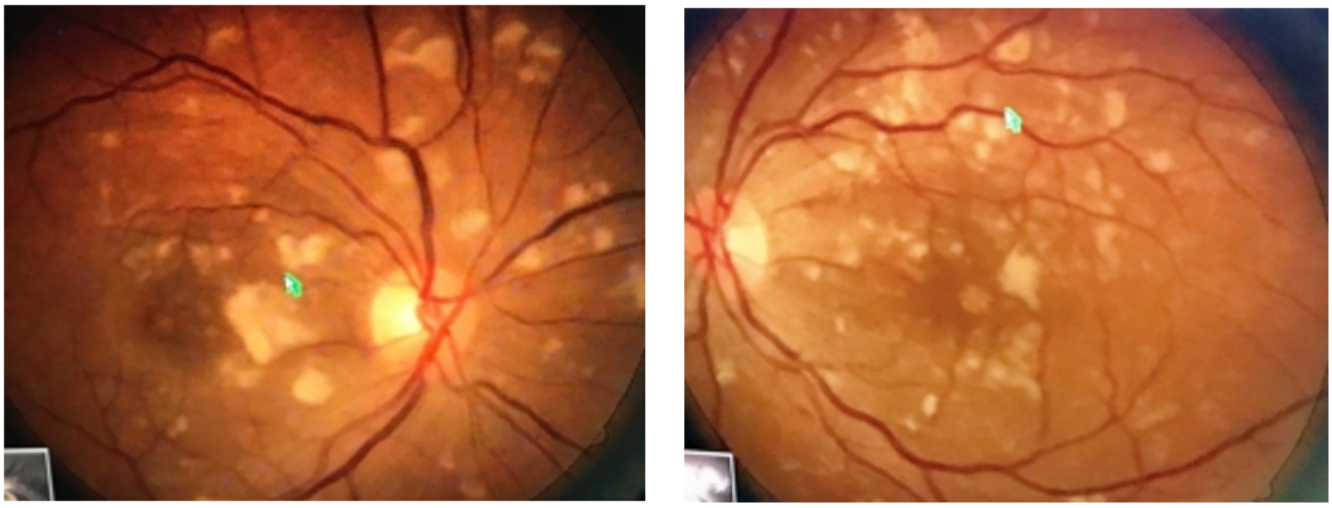

Figure 1: *OD/OS clinical photographs in which cotton wool spots can be seen dispersed in the posterior pole with involvement of the macular center.*

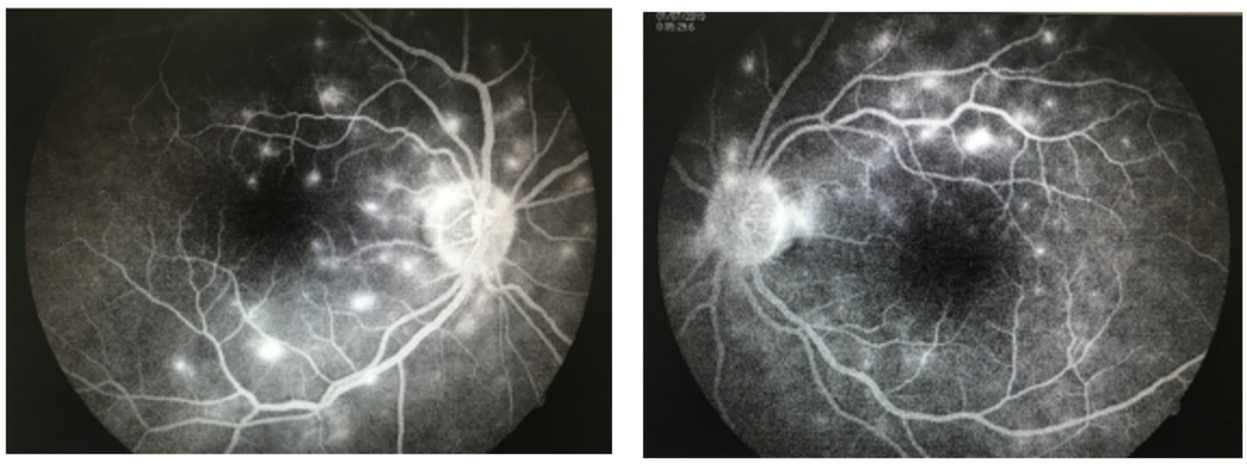

Figure 2: *OD / OS FAR where hyper fluorescence pattern is observed by leakage of dye around cotton wool spots..*

A macular optical coherence tomography (OCT) was performed (Heidelberg Engineering, Germany) where vitreous macular interface shows in the right eye presence of epiretinal membrane, loss of foveal architecture, with an increase in the central macular thickness (CMT) of 723 um OD and 667 um OS, hypo reflective area below the neurosensory retina in relation to serous retinal detachment (Figure 3). Retinal Autofluorescence (RAF) is performed where hypo autofluorescence zones are observed which also correspond to the areas of cotton wool spots. Macular OCT control is performed after 6 days of systemic treatment by the Department of Internal Medicine and ophthalmological surveillance, where there is evidence of a decrease in GMC predominantly in the left eye, 634 um in OD and 350 um OS. At a month the (Central Macular Thickness) CMT of 499 um in OD and 342 um OS with decrease in serous detachment of the retina (Figure 4). The patient continued in medical treatment for the treating services, however, she died 2 months after the onset of symptoms due to complications of acute pancreatitis.

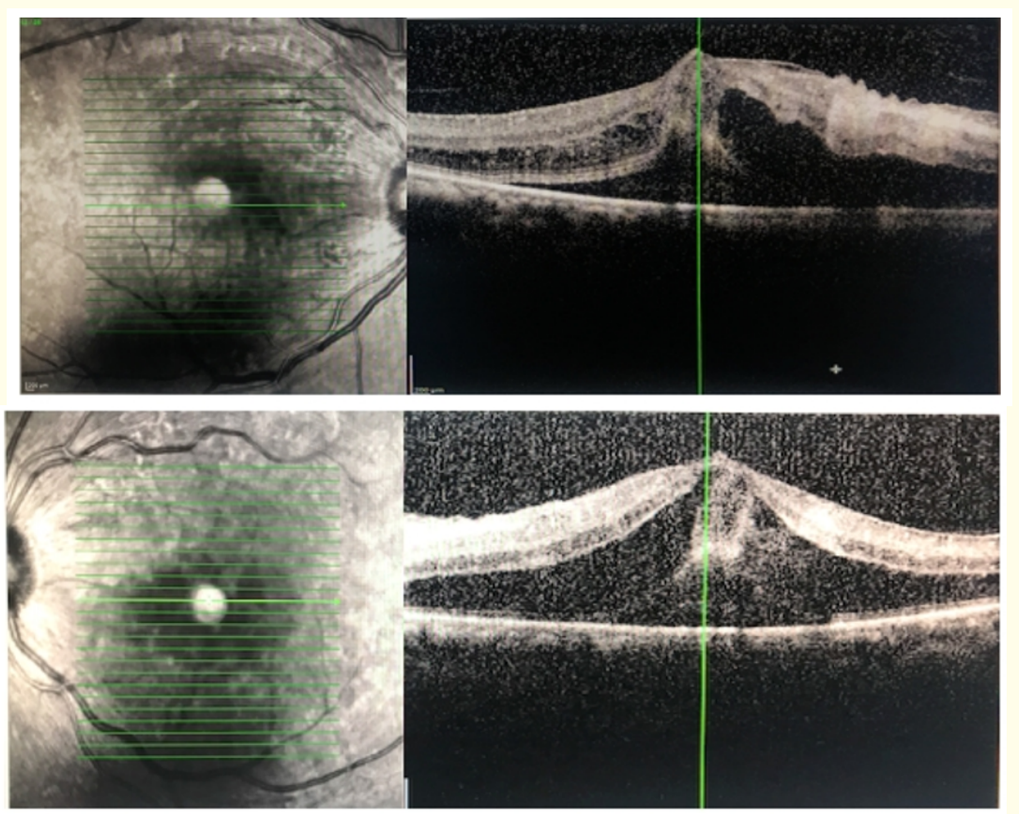

Figure 3: *OCT of initial OD/OS macula where increased CMT is observed at the expense of the hypo reflective zone between the neuro-sensory retina (NSR) and the retinal pigment epithelium (RPE) corresponding to serous detachment.*

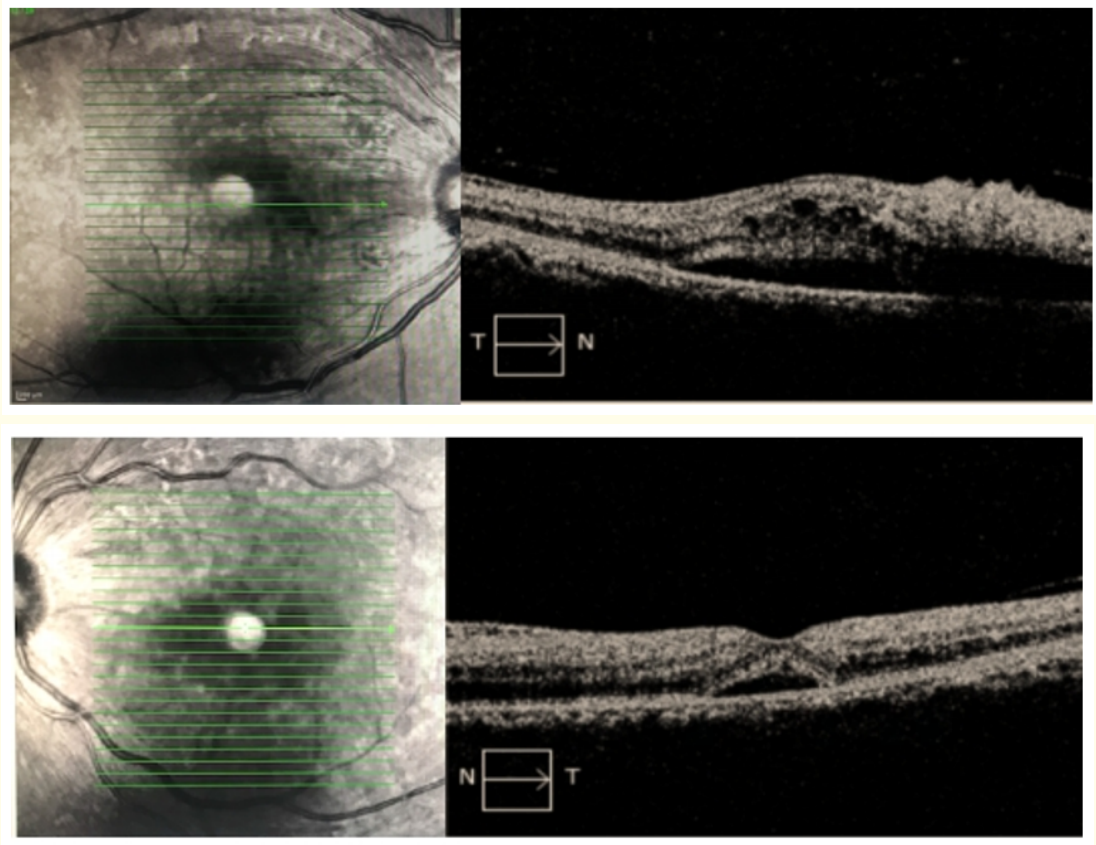

Figure 4: *Macula OCT shows a decrease in major CMT in the left eye without treatment after 1 month of expectant behavior.*

Discussion

In PLR, visual loss due to symmetric bilateral ocular involvement is the one with the most frequent form of presentation, although in some cases it is presented unilaterally [5]. Many systemic disorders have been involved in its genesis but the most commonly associated is acute pancreatitis. Embolization occurs as a result of disseminated pancreatic proteases in the systemic circulation. It has also been proposed that microembolization derives from leukoembolization by leukocyte aggregation. Activation of C5 and complement would play a crucial role with secondary lymphatic extravasation [1].

The fundoscopic signs most frequently found were cotton wool spots (93%), followed by retinal hemorrhages (65%) [6,7]. At 2 months of follow-up, a normalization of the retinal appearance in the fundoscopic examination is present in 40% from the patients; optic atrophy occurred in 64%, mottling of the retinal pigment epithelium in 23%, thinning of the retina in 14% and narrowing of the retinal arteries in 4% [1]. In this case, it presented cotton wool spots, serous retinal detachment that were the cause of the visual loss that the patient presented but that were improving over time with the sole observation.

Within the diagnostic criteria for PLR according to a last classification, there is an associated disease or contributing event and an ophthalmologic sign [3]. In this case, pancreatitis and fundoscopic findings of cotton wool spots and serous detachment of the retina.

The FAR and the OCT were the diagnostic aids we used, which evidenced late hyper fluorescence and serous retinal detachment [8].

The multifocal electroretinogram was affected with attenuation of the a and b waves by altering both the internal and external retina [9].

The treatment for this type of cases has been described with high doses of corticosteroids [10] or simple observation, the latter used in this case, which achieved the improvement of the patient's visual acuity.

Conclusion

PLR is a rare entity that can occur in multiple systemic diseases including acute pancreatitis, in many cases visual acuity is affected bilaterally, although cases have been reported unilaterally and the treatment of these cases has been reported with high doses of corticosteroids versus observation. The visual recovery is variable from the total recovery to little recovery this due to the condition in the photoreceptor layer, optic nerve atrophy among others, in our case the behavior was expectant, the improvement of visual acuity was adequate, although the prognosis of life very bad.

Conflict of Interest

We declare no financial interest and no conflict of interest exist.

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