International Journal of Science and Research (IJSR)
ISSN (Online): 2319-7064
Index Copernicus Value (2016): 79.57 | Impact Factor (2017): 7.296

Serpiginous Choroiditis and Plaque Epitheliopathy: A Comparative Study

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Abstract: ***Serpiginous choroiditis and epitheliopathy in plaques are among the syndromes of the white spots of the fundus. Their clinical and angiographic aspects are similar, especially in the acute phase. However, their evolutionary profiles and their prognoses are different, which imposes a diagnosis of certainty in order to better take care of patients suffering from these pathologies and know how to look for evolutionary complications that can be serious. The clinical presentation, the results of the functional explorations, the treatment as well as the evolution of these two pathologies are discussed in this article.***

Keywords: serpiginous choroiditis, plaque epitheliopathy, angiography

1. Introduction

Serpiginous choroiditis (CS) and plaque epitheliopathy (PPE) are inflammatory disorders of unknown origin.

They present similarities which can be at the origin of confusions between these two affections. However, they are very different, both in terms of their evolution and their prognosis. We report four cases of patients, two with Serpiginous choroiditis and two with plaque epitheliopathy, and discuss the clinical, angiographic, therapeutic, and evolutionary aspects of these two retinal lesions.

Observation 1

It is a 38-year-old patient, with no particular pathological history, who consults for a decrease in unilateral visual acuity of the right eye. The ophthalmologic examination has a visual acuity of 1/10 in the right eye and 10/10 in the left eye, the anterior segment is normal, the vitreous is clear in both eyes. The background shows a pseudopoidal lesion in the right peripapillary and extending along the two temporal arches. the examination of the left eye is strictly normal.

Fluorescein angiography shows at an early stage hypo-fluorescence of choroidal lesions with late hyperfluorescence of the edges (Figure 1).

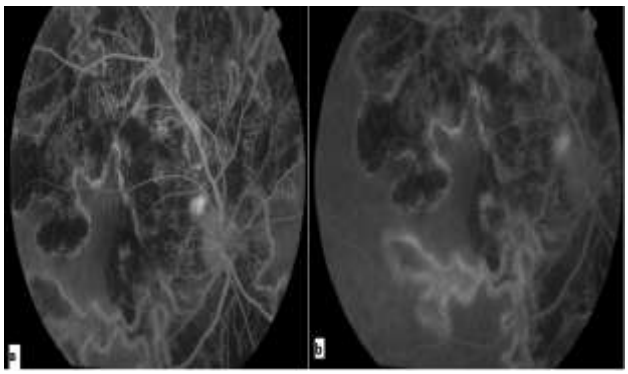

Figure 1: Fluorescein angiography of the OD: a. Hypo-fluorescence of lesions at early times. b. hyper-fluorescence of the active lesions and appearance of a continuous hyper-fluorescent border around the cicatricial lesions.

Observation 2

It is a 41-year-old patient, with no significant history, who presents to the emergency department for a decrease in unilateral visual acuity of the right eye.

The ophthalmological examination found visual acuity at 1/10 in the right eye and 5/10 in the unreadable left eye, a calm anterior segment at the level of both eyes. The fundus reveals the presence of yellowish polycyclic lesions located in the peripapillary and along the lower temporal vascular arch, evolving into a snake with a small vascularization in both eyes.

Fluorescein angiography revealed hypofluorescent lesions at early times, with a hyperfluorescent border surrounding the lesion at late times, indicating its healing (Figure 2).

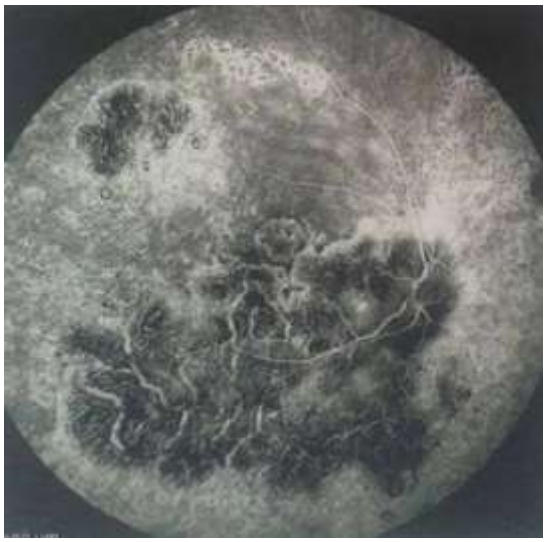

Figure 2: Retinal fluorescein angiography of the right eye: polycyclic hypo-fluorescent lesion along the temporal vessels inferior to late times, surrounded by a hyper-fluorescent border, the arteries and veins are loose.

In view of the clinical and angiographic aspect of the lesions, the diagnosis of serpiginous choroiditis was retained, and both patients received a bolus of methylprednisolone at a rate of 10 mg/ kg/day for three days, with an oral relay (prednisone 1 mg/kg/d).L'évolution a été marquée par la stabilisation des lésions avec une amélioration variable de l'acuité visuelle.

Observation 3

He is a 25-year-old man with no significant history who consults for a reduction in bilateral visual acuity.

The ophthalmological examination has a visual acuity of 3/10 in both eyes. The anterior segment and the vitreous are calm. The fundus examination found, at the level of both eyes and almost similarly, deep yellowish-yellow lesions, with clear contours, disseminated in the posterior pole and retinal periphery associated with pigmented scarring lesions (Figure 3).

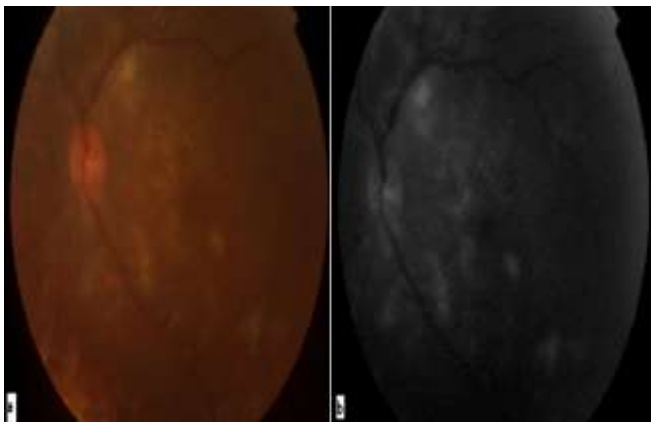

Figure 3: a: photo of the fundus of the left eye White-yellowish lesions disseminated at the post pole and at the middle periphery. b: a hypo-autofluorescent aspect of the lesions

Fluorescein angiography demonstrated hypo-fluorescent retinal lesions at an early time and late hyperfluorescence at the plate level (Figure 4).

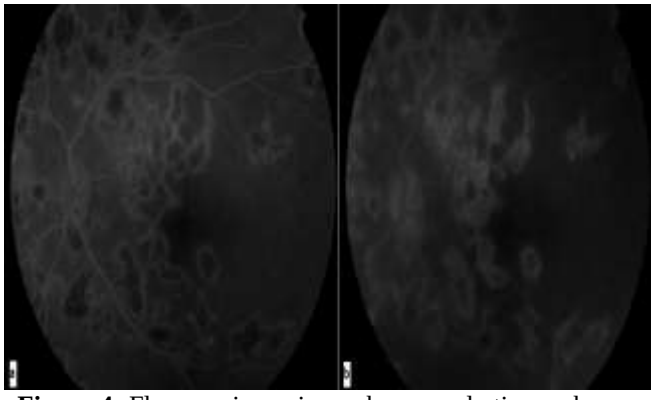

Figure 4: Fluorescein angiography: **a**. early time: a hypo-fluorescent appearance of the lesions. **b.** late times: hyper-florescence of lesions.

Observation no 4

This is a 32-year-old man, with no notable history, who consults for a decrease in bilateral visual acuity.

The ophthalmological examination found a visual acuity at 1/10 in the right eye, 3/10 at the level of the left eye. The anterior segment is calm. A hyalite with a cross has been found. The fundus examination found multiple whitish lesions in both eyes with a macular lesion in the right eye (Figure 5) and flush with the macula in the left eye.

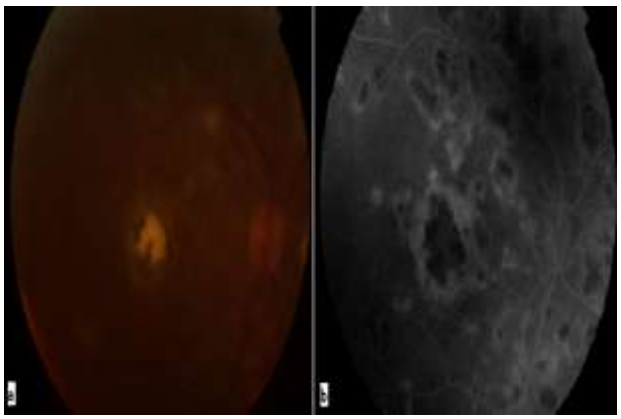

Figure 5: a: photo of the fundus of the right eye: the presence of multiple whitish lesions at the posterior pole with a macular lesion.b: Fluorescein angiography: hypo-fluorescent lesions surrounded by hyper-fluorescence.

Fluorescein angiography demonstrated hypo-fluorescent lesions at early time and hyper-fluorescent at late times. The etiological assessment of these two chorio-retinitis does not find any extra-ophthalmological involvement, and especially no argument in favor of an infectious cause. Both patients received a bolus of corticosteroids for 3 days, followed by oral corticosteroids.

The evolution was favorable in the first patient. However, it has been characterized by multiple recurrences, hence the use of immunosuppressants.

2. Discussion

Plaque epithelial disease and serous choroiditis are inflammatory conditions characterized by multiple whitish lesions of the fundus, often presenting diagnostic difficulties.

EPP is the main differential diagnosis of CS. The age of onset of CS is more advanced than that of PEP, which occurs in more than 75% of cases in young people between 16 and 40 years of age [1]. CS mainly affects males between the ages of 20 and 60 [2], [3].

Both conditions are manifested by a decrease in visual acuity, often unilateral, insidious and accompanied in some cases by scotomas and metamorphopsia in serpiginous choroiditis. During PPE, visual acuity is reduced rapidly and bilaterally in two-thirds of cases and may be preceded by a prodromal influenza-like illness [1].

Visual acuity is variable depending on the location of lesions in relation to the macular region.

In the acute phase, the yellowish-white lesions in PPE, which reach the retinal pigment epithelium and the choriocapillaris, are similar in coloration and appearance to

early serpiginous choroiditis. These lesions are deep, of variable size and number. They are located in the peripapillary and confluent in the SC.

Several ocular lesions may be associated with PPE: anterior uveitis [4], hyalite (the case of patient 4), retinal serous detachment [5], vasculitis, papillitis [6] and episcleritis.

At this stage, fluorescein angiography shows early hypofluorescent lesions that slowly and progressively imbibe giving inhomogeneous hyperfluorescence at late times in the PPE, unlike SC where the impregnation is centripetal starting with the edges of the lesions to extend later [7].

The distinction between these two pathologies will be mainly on the clinical evolution. During plaque epitheliopathy, the plaques tend to attenuate one week after their onset, before giving way, after two more weeks, to well-defined scars. The visual prognosis is generally good with a visual recovery of 5 / 10th and above in nearly 80% of patients [1].

Recurrences are often bilateral and affect up to 50% of patients. They occur early, during the six months after the first outbreak [7]. The visual prognosis is more reserved in case of foveolar involvement [8] as the case of the fourth patient.

Serpiginous choroiditis is a condition of poor prognosis. The spontaneous evolution is towards the cicatrization of the lesions in two to seven weeks [7]. The recurrences are made by insidious outbreaks during which new foci usually appear at the edge of the scars. The progression is carried out, by degrees, more often in a centrifugal way, but cases of centripetal progression have been reported, realizing a "geography map" or "serpiginous" aspect, as the case of our two patients [1]. The remission phase between recurrences is very variable with a delay varying from one to ninety-two months [3]. The fall in visual acuity is only frank in case of foveal damage [2] however, central or central echocardiograms can be established in agreement with the localization of posterior pole lesions [1]. In the end, 25% of patients will have an acuity less than or equal to 1/10 and 75% will have a loss of visual acuity on one or two eyes [9].
In PEF, treatment is only justified in cases of significant ocular inflammation or the presence of ocular or systemic vasculitis associated and is based on systemic corticosteroid therapy or even immunosuppressive therapy [10].

The efficacy of corticosteroids to limit the active phase of lesions during serpiginous choroiditis has been demonstrated, but they seem to be powerless to prevent recurrences, which can occur when they are stopped [9]. Studies have found good results with corticosteroids-ciclosporin-azathioprine or the combination of ciclosporin with other immunosuppressants [2]

3. Conclusion

EPP and serpiginous choroiditis are two chorioretinal diseases that are similar but differ in their lesional topographic mode, their angiographic appearance, and their evolutionary potential.

4. Conflicts of interest

The authors declare that they have no links of interest in relation to this article.

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