



Contribution of Optical Coherence Tomography in the Diagnosis of Idiopathic Polypoidal Choroidal Vasculopathy in a Young Adult at Iota-Teaching Hospital

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Case Report

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Abstract

Introduction: Idiopathic polypoidal choroidal vasculopathy (IPCV) is a common cause of hemorrhage of the retinal pigmentary epithelium and neurosensory retinal detachment of oxidative origin. Its diagnosis is more easily made by Optical Coherence Tomography and Fluorescence Angiography or ICG. The aim of our work is to highlight the accuracy of OCT and AGF in the diagnosis of IPCV. We report a clinical case received in February 2019 in the vitreoretinal surgery and functional exploration of the visual apparatus department of the IOTA-Teaching Hospital.

Case Report: A young man with a personal pathological history of arterial hypertension was referred to the department for macular OCT for central serous chorioretinitis. OCT and intravenous fluorescein angiography showed features of idiopathic polypoidal choroidal vasculopathy. The patient received anti-VEGF injections followed by significant visual improvement.

Discussion: The pathogenesis of IPCV is not clearly elaborated, but it appears to be primarily due to an abnormality of choroidal vasculature.

Conclusion: IPCV can occur in young subjects and leads to severe impairment of visual function. These severe visual impairments are resolved by the correct use of anti VEGF associated or not with the Argon laser.

Keywords: Idiopathic Polypoidal Choroidal Vasculopathy; Visual Acuity Decrease; Anti VEGF; Bamako

Abbreviations: IPCV: Idiopathic Polypoidal Choroidal Vasculopathy; DEP: Dome-Shaped Pigmentary Epithelium; PDT: Dynamic Phototherapy; AMD: Age-Related Macular Degeneration.

Introduction

Yannuzzi was the first ophthalmologist to describe Idiopathic Polypoidal Choroidal Vasculopathy (IPCV) in 1982 [1]. Idiopathic choroidal polypoidal vasculopathy is an abnormal, branched vascularization of the internal choroid associated with aneurysmal vascular dilations that may be responsible for detachment of the serous pigmentary

epithelium and sometimes a true hemorrhagic picture [2]. While most often idiopathic, PCV may also be secondary to exudative AMD, myopic staphyloma, central serous chorioretinopathy/ diffuse retinal epitheliopathy or nevus. More recently, Freund has included PCV in the spectrum of pachychoroids [2].

The etiopathogeny of PCV is still unknown today [3]. PCV is clinically characterized by the presence of juxtapapillary and/or macular choroidal polypoidal excrescences. The visual prognosis is correlated with either the evolution of retinal lesions or the physical treatment of active polyps by argon or diode laser photocoagulation [4].

Optical coherence tomography allows us to obtain, in a noninvasive way, the characteristic signs of PCV such as the detachment of the dome-shaped pigmentary epithelium (DEP) and the sign of double-layer [5,6].

Apart from treatment of polyps with argon or diode laser, there are other therapeutic alternatives such as focal laser, dynamic phototherapy (PDT), Anti-VEGF and combined treatment (PDT + anti-VEGF) [6-8].

Case Presentation

This is a 44-year-old man with a history of high blood

pressure referred from a clinic in Bamako for macular OCT for central serous chorioretinitis. He had a sudden drop in visual acuity in his left eye. His best corrected visual acuity was 10/10 in the left eye and 10/10 in the contralateral eye. Examination of the fundus of the left eye revealed the presence of retinal hemorrhages, dry exudates, and multiple serous and hemorrhagic retinal detachments located along the temporal vascular arches. Optical coherence tomography revealed central fossae, multiple retinal serous detachments, serous detachment of the pigmentary epithelium, and a parapapillary vascular polyp in the left eye and a normal one in the right eye (Figure 1).

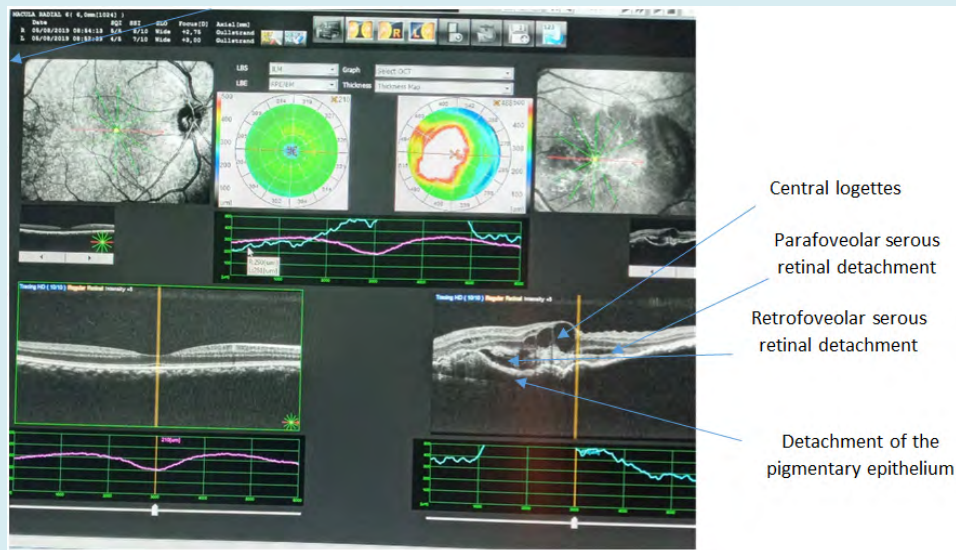


Figure 1: Radial macular OCT photograph of the left eye showing macular exudate, retinal serous detachment and detachment of the pigmentary epithelium in the fossa.

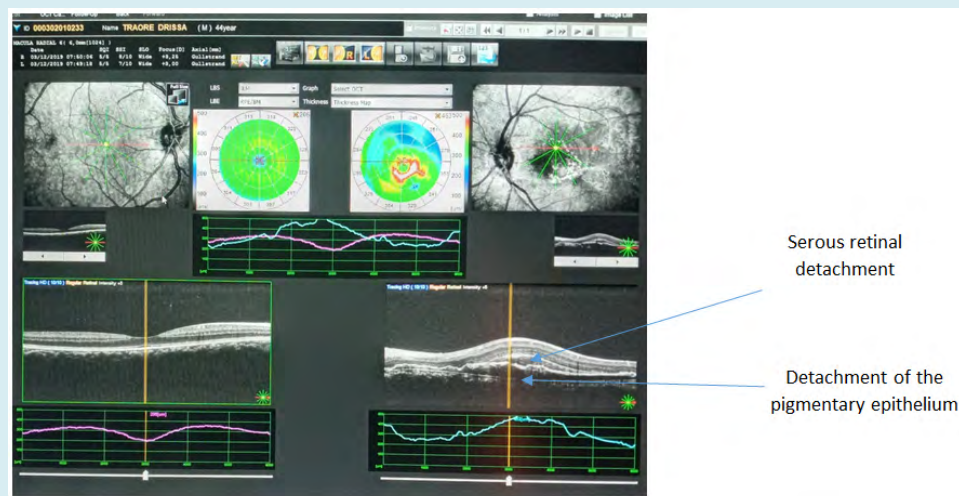


Figure 2: Radial macular OCT image of the patient's left control eye after the 3 anti-VEGF injections, we note the disappearance of the stalls, a regression of retinal serous detachment with persistence of a fine blade of retinal serous detachment and serous detachment of the retrofoveolar pigmentary epithelium.

The diagnosis of idiopathic Choroidal polypoid vasculopathy was retained in front of this table. He then received 3 monthly injections of anti VEGF, followed by an improvement in visual acuity of the left eye with a 3/10 correction, disappearance of the stalls, regression of retinal serous detachment with persistence of a fine blade of retinal serous detachment and serous detachment of the retrofoveal pigmentary epithelium and disappearance of the polyp (Figure 2).

The patient was subsequently lost to follow-up. In April

2020, we received him for decreased bilateral vision. His best corrected visual acuity was 3/10 in the right eye and 1/10 in the left eye. Examination of the fundus of the right eye revealed retinal hemorrhages and a central serous retinal detachment and a parapapillary hemorrhage and in the left eye central fibroatrophic scars e. Optical coherence tomography revealed in the left eye a central retinal serous detachment, a serous detachment of the pigmentary epithelium and a para-papillary vascular polyp. In the right eye, there were intraretinal fossae and a thin blade of retrofoveal retinal serous detachment (Figure 3).

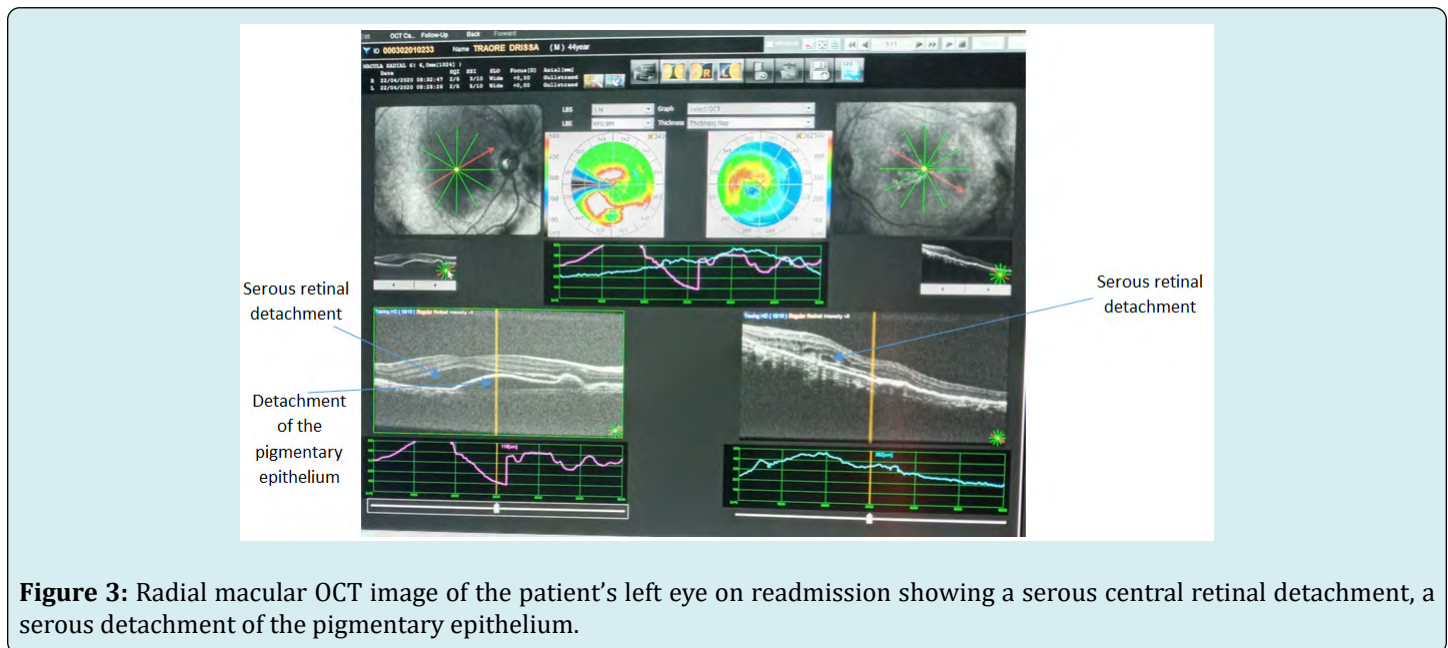


Figure 3: Radial macular OCT image of the patient's left eye on readmission showing a serous central retinal detachment, a serous detachment of the pigmentary epithelium.

In the left eye, the AGF showed diffusion in the peri-papillary neo-vessels, macular exudates and localized mass

effects in the macula. Then, in the right eye, only diffusion of the peri-papillary neo-vessels was noted (Figure 4).

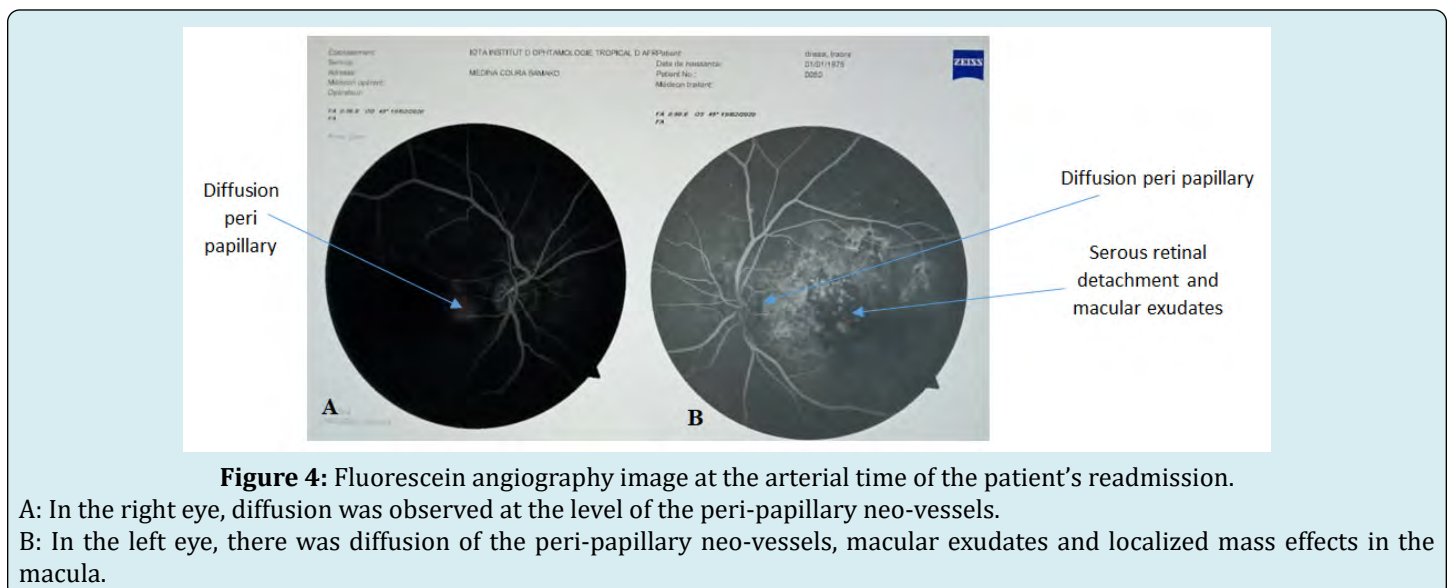


Figure 4: Fluorescein angiography image at the arterial time of the patient's readmission.

A: In the right eye, diffusion was observed at the level of the peri-papillary neo-vessels.

B: In the left eye, there was diffusion of the peri-papillary neo-vessels, macular exudates and localized mass effects in the macula.

In venous time, in the left eye there was an accentuation of the diffusion of the peri-papillary neo-vessels and macular exudates, and in the right eye only the accentuation of the

diffusion of the peri-papillary neo-vessels was observed (Figure 5).

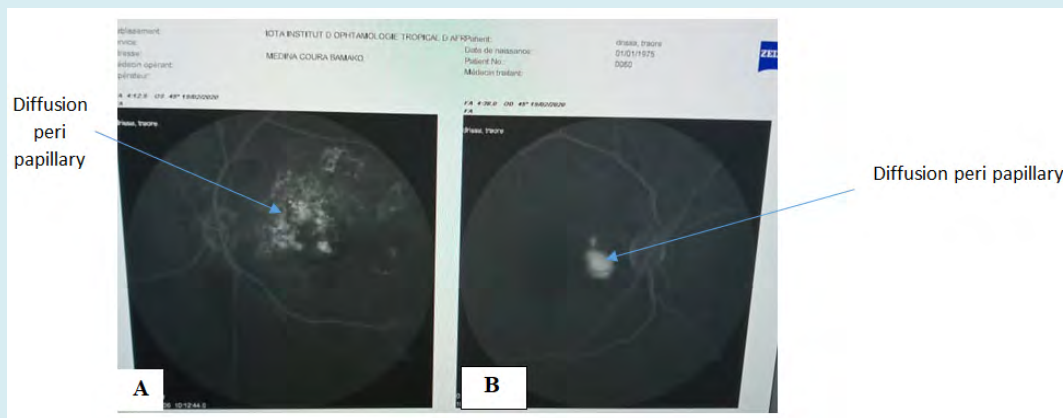


Figure 5: Fluorescein angiography image at the venous time of the patient's readmission.

A: A In the left eye, the accentuation of the diffusion of the peri-papillary neo-vessels and macular exudates was noted.

B: A In the right eye, the diffusion of the peri-papillary neo-vessels was also accentuated.

We proposed a series of 3 monthly injections of anti-VEGF with clinical control just before the last one showing the persistence of peri papillary neo vessels, macular

exudates, retinal serous detachment and macular scars in the left eye. Then the right eye showed mainly peri-papillary neo-vessels (Figure 6).

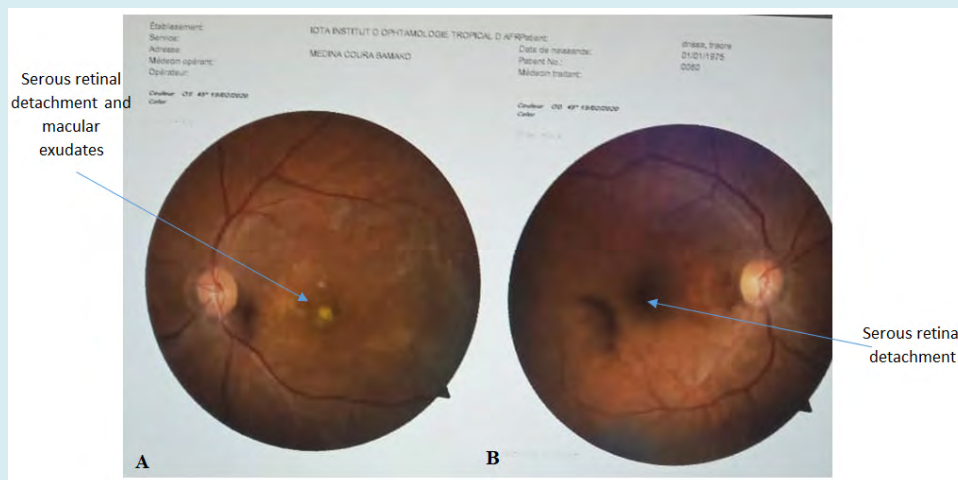


Figure 6: Photograph of the patient's retinography at readmission.

A: A In the left eye there were peri-papillary neo-vessels, macular exudates, retinal serous detachment and macular scars.

B: A the right eye was mainly peri-papillary neo-vessels.

The persistence of these retinal lesions of the IPCV despite the series of 3 injections of Anti VEGF is in favour of the poor evolution of the IPCV in our patient.

Discussion

OPCV particularly affects black women between the ages of 50 and 65 with high blood pressure [9]. Its nosological

framework has recently been redefined by Yannuzzi LA, et al. [10]. Vascular lesions correspond to dilated networks of choroidal vessels resulting in multiple aneurysmal lesions forming true "polyps" sometimes visible at the fundus as a red-orange subretinal mass. These polyps are usually located in the peripapillary region. However, a macular variant of IPCV has recently been described [10]. It is interesting to note in our patient's case that the macular involvement was

initially in the second eye and in the first eye we saw the macular lesions at an advanced stage.

Age-related macular degeneration (AMD) is the main differential diagnosis of IPCV in Caucasian subjects, but also central serous chorioretinitis [8,9]. Although the abnormalities of the funds are sometimes identical, unlike AMD, there is generally no drusen or PE revisions in patients with AMD [10]. In addition, IPCV appears to have a better visual prognosis and a more stable long-term course than AMD [11]. Yannuzzi considers that the majority of patients with VCPI maintain a visual acuity of 2-3/10 or greater [10]. OCT SD allows the diagnosis of VCPI to be strongly suspected, by showing the characteristic signs which are: polyps, in the form of elevations of the domed pigmentary epithelium, and the double layer sign which is an irregular planar elevation of the pigmentary epithelium associated with a thickened choroid [12]. FFA, on the other hand, is not very specific of VCPI and shows a hyperfluorescence crescendo with a late hypofluorescence and leakage pattern or serous pigmentary epithelium detachment [12]. However, in China, the authors have shown that the combination of OCT and FFA increases the sensitivity of the diagnosis of VCPI from 60% to 90% [13]. The common sign of VCPI in OCT SD and FFA is the pigmentary epithelium detachment. In our patient the combination of OCT and FFA allowed us to diagnose VCPI in front of the following signs: Serous pigmentary epithelium detachment, serous retinal detachment, leakage pattern. However, the prognosis of the disease is heavily influenced by the presence of occult choroidal neo-vessels [11]. This may be the reason for the extremely unfavorable course of our patient's IPCV. Nevertheless, rapidly developing exudative and hemorrhagic lesions are usually accompanied by a significant but transient loss of vision due to subretinal hemorrhages and PE detachments that resolve over time. In contrast, the severe loss of vision in the left eye observed in our patient as a result of chorioretinal scarring and areas of extensive retinal fibrosis is a more unusual course of the disease, although we cannot definitively rule out an association between IPCV and subretinal neo-vessels. In addition, the pejorative evolution of the right eye could be due to delayed diagnosis and irregular follow-up. In fact, the optimal treatment of IPCV is currently not clearly codified. There is no medical treatment. Data from the literature show that corticosteroids provide little or no benefit in the treatment of IPCV.

Concerning the therapeutic management of polyps, there are therapeutic alternatives: focal laser, dynamic phototherapy (PDT), anti-VEGF and combined treatment (PDT + anti-VEGF). We have achieved functional and anatomical improvement with intravitreal injections of anti-VEGF.

Conclusion

Although ICGA remains the current gold standard for the diagnosis of VCPI, the combination of FFA and OCT nevertheless has a high sensitivity for the diagnosis of VCPI. This is a godsend for us ophthalmologists working in the tropics with limited resources.

Conflict of Interest: None

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