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Idiopathic Choroidal Neovascularization in Young Adults: Report of Two Cases

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ABSTRACT

Idiopathic choroidal neovascularization (ICNV) is a rare but potentially vision-threatening condition occurring in patients under 50 years of age. Its etiology remains unclear, and the disease often affects the macular region, leading to severe visual impairment if untreated. We report two cases of ICNV in young adults successfully managed with intravitreal anti-VEGF injections. These cases illustrate the diagnostic approach and highlight the favorable prognosis achievable with early treatment.

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KEYWORDS:

Idiopathic choroidal neovascularization, anti-VEGF, OCT, fluorescein angiography, young adults.

INTRODUCTION

Idiopathic choroidal neovascularization (ICNV) represents the second most common cause of choroidal neovascularization (CNV) in patients under 50 years old, after pathological myopia[1]. It is characterized by the presence of subretinal neovascular membranes in the absence of predisposing conditions such as myopia, trauma, inflammatory diseases, or hereditary dystrophies[2]. Due to its frequent juxtafoveal or subfoveal location, ICNV poses a major risk to central vision. The introduction of anti-VEGF therapy has markedly improved the functional prognosis of this condition[3].

PATIENTS AND METHODS

Two patients presenting with macular symptoms were evaluated at the Department of Ophthalmology, Hassan II Military Hospital – Laâyoune. All underwent complete ophthalmologic examination, including fundus photography, fluorescein angiography (FA), and optical coherence tomography (OCT). An etiological workup was performed to exclude secondary causes of choroidal neovascularization (myopia, inflammatory, infectious, or hereditary etiologies). Treatment consisted of intravitreal injections (IVT) of bevacizumab (1.25 mg/0.05 ml), repeated as needed based on clinical and imaging findings.

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CASE REPORTS

Case 1

A 26-year-old male presented with a sudden decrease in visual acuity in the left eye (LE). Visual acuity: 1/10 LE (uncorrected), 10/10 RE. Anterior segment: normal in both eyes. Fundus examination: macular subretinal membrane with serous retinal detachment. OCT: loss of the foveal contour, disruption of the retinal pigment epithelium (RPE), and central retinal thickness of 461 µm. Fluorescein angiography: early hyperfluorescence with late dye leakage, confirming a choroidal neovascular membrane (CNV). Treatment with intravitreal bevacizumab led to gradual improvement in visual acuity and resolution of subretinal fluid.

Case 2

A 46-year-old female presented with decreased visual acuity in the right eye (RE). Visual acuity: 5/10 RE, 10/10 LE. Anterior segment: normal bilaterally. Fundus examination: macular CNV with retinal thickening. OCT: macular CNV with exudative features. FA: intense early hyperfluorescence with late leakage. The etiological workup was negative. She received intravitreal bevacizumab injections with monthly follow-up and retreatment in case of persistence or recurrence. Favorable visual and anatomical outcomes were achieved after treatment.

DISCUSSION

ICNV accounts for approximately 17% of CNV cases in patients under 50 years. The pathogenesis remains uncertain, though hypotheses include localized defects in Bruch's

membrane and abnormal choriocapillaris permeability, leading to neovascular proliferation beneath the RPE[5].

DIAGNOSTIC APPROACH

Diagnosis relies on the combination of fluorescein angiography and OCT. FA typically shows an early hyperfluorescent lesion with progressive leakage[6]. OCT reveals subretinal hyperreflective material, RPE detachment, and serous retinal detachment. In uncertain cases, OCT-angiography (OCT-A) provides noninvasive visualization of the neovascular network[7].

THERAPEUTIC MANAGEMENT

Before the advent of anti-VEGF therapy, ICNV was treated with photodynamic therapy (PDT) or laser photocoagulation, with limited results and high recurrence rates[8]. Currently, anti-VEGF agents (bevacizumab, ranibizumab, aflibercept) constitute the first-line therapy, offering significant anatomical and visual improvement[9]. Most patients respond favorably after one to three injections, though recurrence occurs in up to 25% of cases[10]. Regular OCT monitoring allows timely retreatment to prevent fibrosis and irreversible photoreceptor loss.

PROGNOSIS

The prognosis of ICNV is generally better than that of CNV associated with age-related macular degeneration (AMD). Early initiation of anti-VEGF therapy, before the cicatricial phase, is essential for visual recovery and to minimize recurrence[11]. In young patients, long-term follow-up remains necessary to detect late recurrences or bilateral involvement[12].

CONCLUSION

Idiopathic choroidal neovascularization in young adults, although rare, should be promptly recognized and treated. Fluorescein angiography and OCT remain key diagnostic tools. Early anti-VEGF therapy allows for functional and anatomical recovery and greatly improves visual prognosis. Continued monitoring is essential to manage potential recurrences and preserve central vision.

ICONOGRAPHY

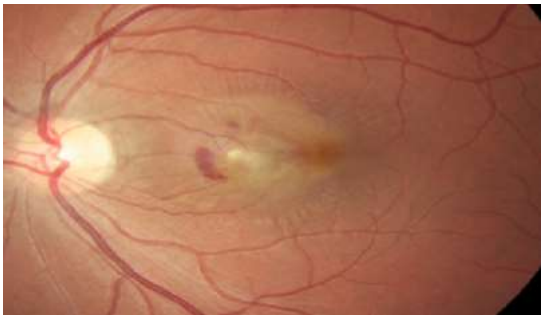

Figure 1 (A). Fundus photograph of Case 1 showing a macular subretinal membrane with serous retinal detachment.

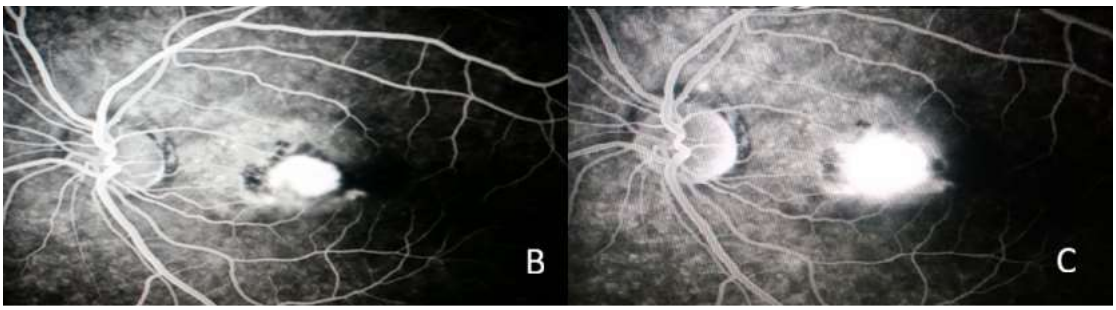

Figure 2 (B and C). Fluorescein angiography of Case 1 displaying early hyperfluorescence with late dye leakage.

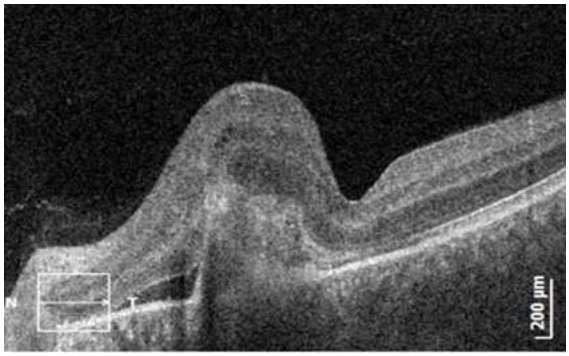

Figure 3 (D). OCT scan of Case 1 revealing foveal contour loss and RPE disruption (central thickness: 461 µm).

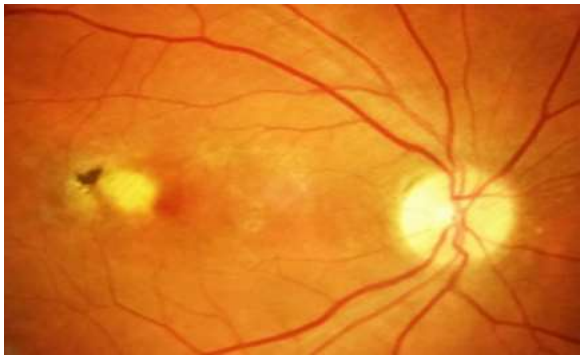

Figure 4 (A). Fundus photograph of Case 2 showing a macular neovascular membrane.

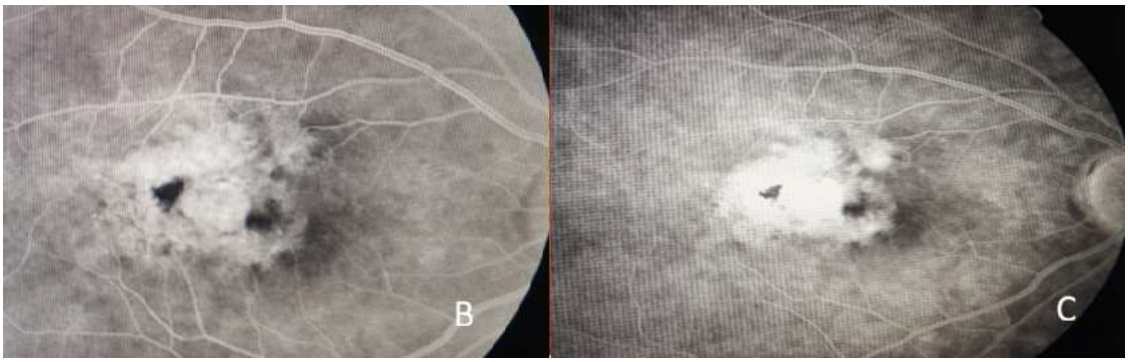

Figure 5(B and C). Fluorescein angiography of Case 2 with intense early hyperfluorescence and late leakage.

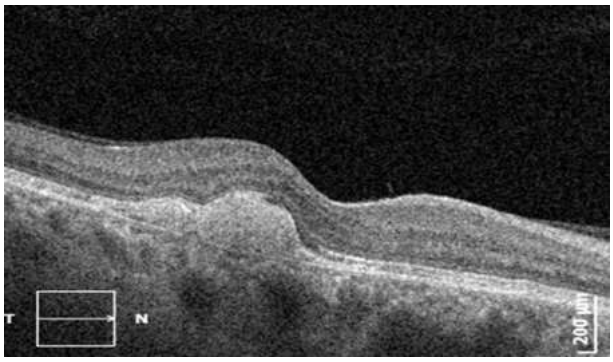

Figure 6 (D). OCT of Case 2 showing subfoveal CNV with exudation.

Author Contributions

Dr. BOUI Hatim: conception, data analysis, manuscript drafting.
Dr. FILALI Zineb: data collection, critical revision.
Dr. Hanine Mohamed Amine: data collection, critical revision.
All authors approved the final version of the manuscript.

Conflict of Interest Statement

The authors declare no conflict of interest related to this study.

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