

Manifestation of classic choroidal neovascularization and diabetic retinopathy simultaneously

Klasik koroid neovaskülerizasyonu ve diyabetik retinopatinin eş zamanlı sunumu

İbrahim TOPRAK¹

1- Uzm. Dr., Servergazi Devlet Hastanesi, Göz Hastalıkları, Denizli

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Yazışma Adresi / Correspondence Address:

E-mail: ibrahim@doctor.com

Phone: 0505 495 3791

ABSTRACT

This report presents a rare case with concurrent neovascular age-related macular degeneration (AMD) and diabetic retinopathy (DR). A 71-year-old diabetic man represented blurred vision in his left eye. Visual acuity was 0.8 (Snellen) in the right eye and counting fingers at 1 meter in the left eye. Anterior segment examination and intraocular pressure values were normal. Fundus examination and fluorescein angiography (FFA) revealed a well-demarcated and progressively leaking classic choroidal neovascularization (CNV) in the left eye. Optical coherence tomography (OCT) confirmed CNV. Moreover, FFA showed findings of proliferative DR in the right eye, and non-proliferative DR in the left eye. Although relation between DR and neovascular AMD has not been completely clarified, manifestation of classic CNV with concurrent DR is an uncommon condition and this point should be kept in the mind.

Key words: Age-related macular degeneration, choroidal neovascularization, diabetic retinopathy

ÖZ

Bu çalışmada neovasküler yaşa bağlı maküla dejenerasyonu (YBMD) ve diyabetik retinopatinin (DR) bir arada bulunduğu nadir bir olgu sunulmuştur. Yetmiş bir yaşında diyabetik erkek hastanın sol gözünde bulanık görme şikayeti ile başvurdu. Görme keskinliği sağ gözde 0.8 (Snellen) ve sol gözde 1 metreden parmak sayma düzeyindeydi. Ön segment muayenesi ve göz içi basıncı ölçümleri normaldi. Fundus muayenesi ve floresan anjiyografi (FFA) sol gözde ilerleyici olarak artış gösteren sızıntının izlendiği keskin sınırlı klasik koroid neovaskülerizasyonunu (KNV) ortaya koymaktaydı. Optik koherens tomografi (OKT) KNV ile uyumluydu. Ayrıca, FFA'da sağ gözde proliferatif DR, sol gözde ise non-proliferatif DR bulguları izlenmekteydi. Neovasküler YBMD ile DRP arasındaki ilişki tam olarak aydınlatılmamış olmasına karşın, klasik KNV'nin DRP ile eş zamanlı ortaya çıkması sık bir durum değildir ve bu durum akılda tutulmalıdır.

Anahtar kelimeler: Diyabetik retinopati, koroid neovaskülerizasyonu, yaşa bağlı maküla dejenerasyonu

INTRODUCTION

Diabetic retinopathy (DR) is a vision-threatening complication of diabetes, and it is characterized by microvascular deteriorations such as endothelial dysfunction and loss of pericytes, which result in retinal ischemia and neovascularization.^{1, 2} Another common cause of blindness in elderly population is neovascular age-related macular degeneration (AMD) and previous studies focused on association between DM and AMD. It was suggested that diabetes has a protective effect on AMD development, whereas population-based trials predominantly found no significant relation between diabetes and AMD.^{1, 3}

In this study, a case of concurrent classic choroidal neovascularization (CNV) and severe non-proliferative DR was reported, which was suggested to be a very rare condition.

CASE REPORT

A 71-year-old man presented with decreased vision in his left eye. He had no history of ocular trauma, surgery or pathology, whereas he was taking oral medication for diabetes mellitus (DM). Corrected distance visual acuity was 0.8 in the right eye and counting fingers (at 1 meter) in the left eye (Snellen charts). Slit-lamp biomicroscopy was non-specific and intraocular pressures (applanation tonometry) were within normal limits. Dilated fundus examination (+90 diopters) revealed bilateral perimacular and peripheral microangiopathic alterations (Figure 1). In the left eye, light-gray subretinal lesion and temporally located exudates were noted (Figure 1).

At the early phase of fundus fluorescein angiography (FFA), a well-demarcated hyperfluorescent subretinal lesion was ob-

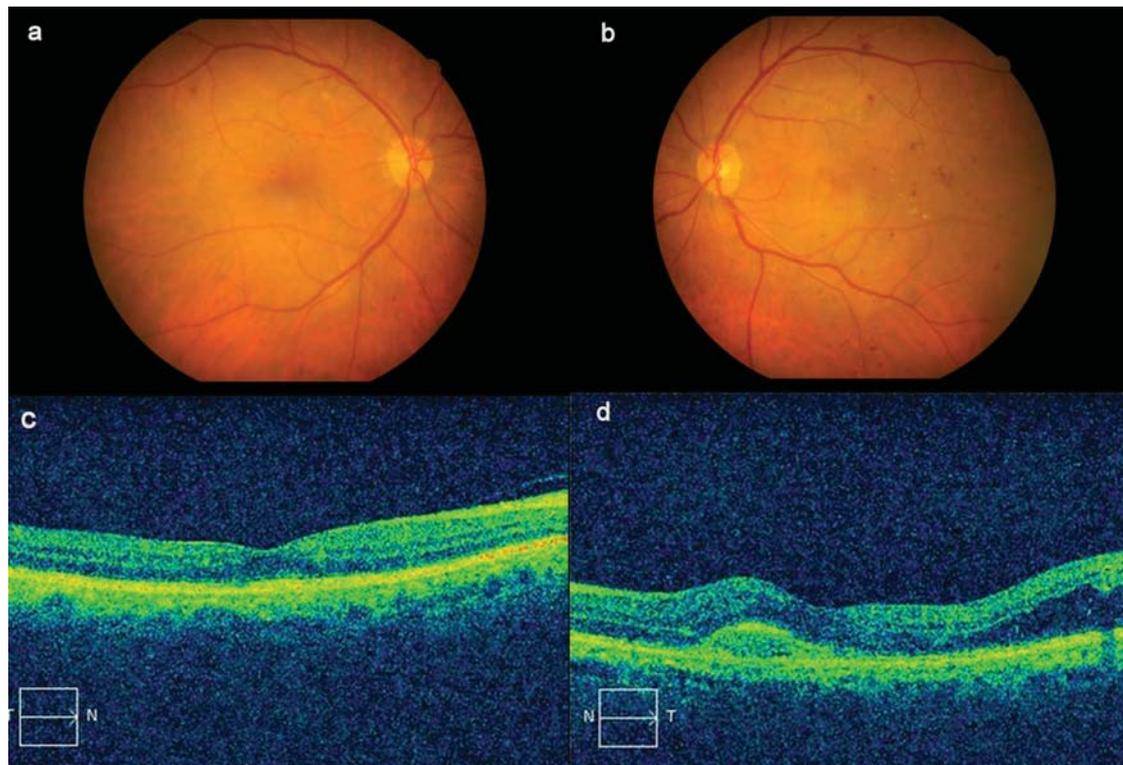


Figure 1. Color fundus photos show bilateral microangiopathic alterations and light-gray subfoveal lesion accompanied by temporally located exudates in the left eye (a, b). Optical coherence tomography scans demonstrate pigment epithelium layer irregularity in the right eye (c), and choroidal neovascularization and subretinal fluid in the left eye (d).

served and dye leakage was progressively increased during the late phase (Figure 2). Moreover, FFA demonstrated bilateral intraretinal microvascular abnormalities (IRMA), and neovascularization elsewhere (NVE) was present in the right eye (Figure 2). Optical coherence tomography (OCT) scan re-

vealed RPE irregularity in the right eye and choroidal neovascularization, subretinal fluid and retinal thickening in the left eye (Figure 1). Subfoveal lesion was considered as classic CNV and we found no other etiological factor for CNV. The patient was referred to a retina clinic for treatment.

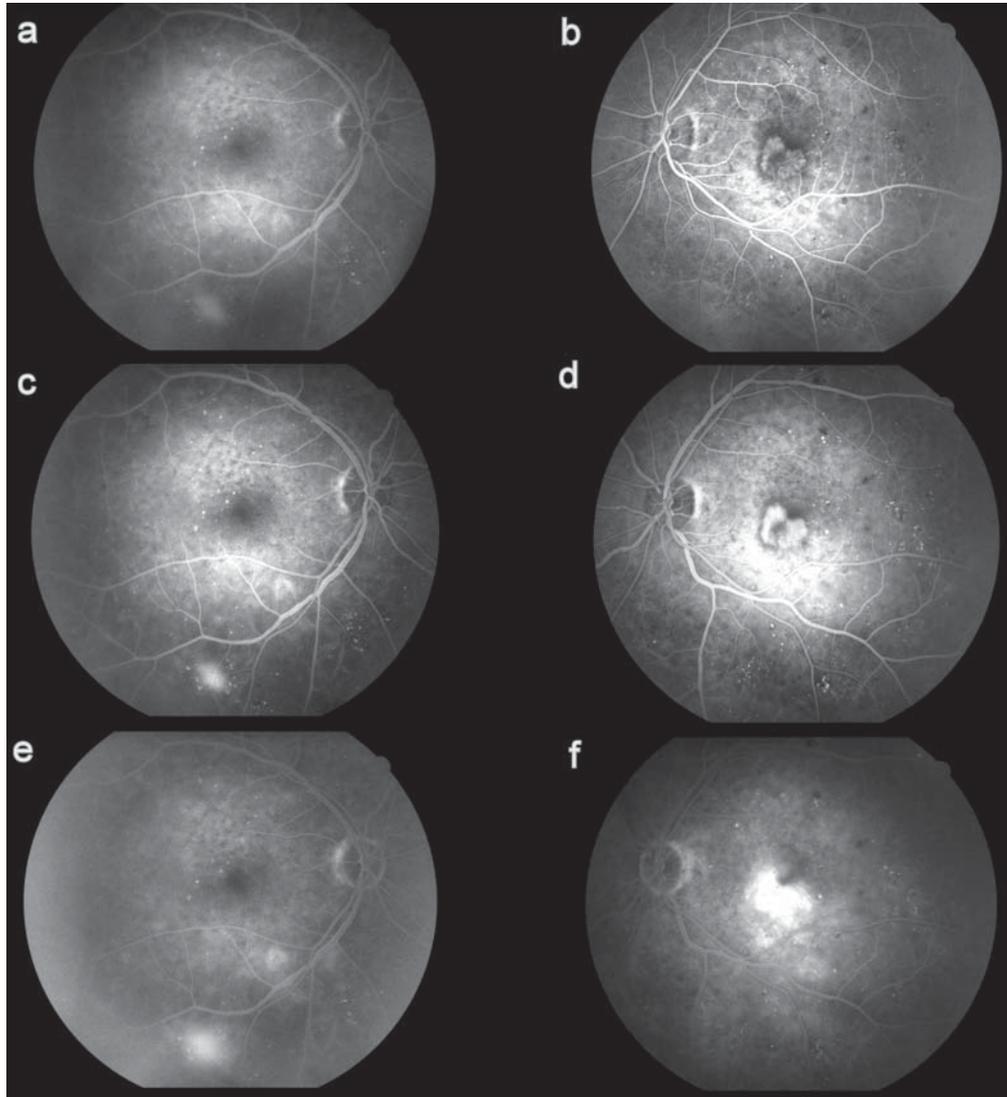


Figure 2. Fundus fluorescein angiography (FFA) reveals paramacular microaneurysms and dye leakage from infero-temporal neovascularization in the right eye (**a, c, e**). In the left eye, well-demarcated subfoveal hyperfluorescent vascular network of the classic choroidal neovascularization was observed in the early phase (**b**) and the lesion showed progressive fluorescein leakage during the mid and late phase of the angiogram (**d, f**).

DISCUSSION

Epidemiological trials reported no significant association between DM and AMD.^{1,2} However, Zylbermann *et al*⁴ reported that prevalence of neovascular AMD is lower in patients with DR (0.86%) than in the general population, and laser treated patients had lower risk for neovascular AMD development when compared with the non-laser-treated patients. Another study by Voutilainen-Kaunisto *et al*⁵ suggested that the incidence of neovascular AMD was lower in patients with type 2 DM than in the healthy controls during 10 years follow-up.

Several mechanisms were hypothesized to explain the protective effect of DR on AMD development. It was suggested that, DM leads metabolic and structural alterations in chorio-retinal vascular bed, RPE and Bruch's membrane, which possibly block progression to neovascular AMD.^{1,5}

In the current case-report, the patient had not received any previous treatment such as laser photocoagulation for DR. Ophthalmological examinations revealed diagnosis of proliferative DR in the right eye, and classic CNV and coexisting severe non-proliferative DR in the left eye.

Although choroidal neovascularization was found to be related with chorioretinal disorders, a number of studies reported concurrent manifestation of retinopathy and choroidal neovascularization.^{6,7} For instance, Öner *et al*⁸ presented coexistence of retinal and choroidal neovascularization secondary to radiation therapy for brain tumor.

In conclusion, concurrence of neovascular AMD and DR is a rare condition and it should be kept in the mind that choroidal neovascularization can be manifested as a hidden part of DR on FFA.

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