Acute Posterior Multifocal Placoid Pigment Epitheliopathy After Coronary Bypass Surgery: Case Report

Koroner Baypas Cerrahisi Sonrası Gelişen Akut Posterior Multifocal Plakoid Pigment Epiteliopati

Abuzer GÜNDÜZ,[a]
Tongabay CUMURCU,[a]
Selim DOĞANAY,[a]
Mufide ÇAVDAR[a]

[a]Department of Ophthalmology, İnonü University Faculty of Medicine, Malatya

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Yazışma Adresi/*Correspondence:*
Abuzer GÜNDÜZ
İnonü University Faculty of Medicine, Department of Ophthalmology, Malatya, TÜRKİYE/TURKEY
abuzergunduz@hotmail.com

ABSTRACT This report evaluated bilateral acute posterior multifocal placoid pigment epitheliopathy (APMPPE) with unilateral papillitis. We studied a 58-year-old male patient attempt to our clinic for blurred vision 4 days after a bypass surgery. A fundus examination revealed bilateral creamy white lesions in the posterior pole and papillitis in the left eye. In fundus fluorescein angiography, lesions showed hypofluorescence in early phases and hyperfluorescence in late phases. Optical coherence tomography imaging showed impaired retinal pigment epithelial boundaries. APMPPE after coronary bypass surgery may help to find out probable etiology. In this case, we thought that direct surgical stress or surgical-induced stress factors may cause APMPPE in susceptible persons. To obtain exact results, specific immunogenetic studies are needed.

Key Words: Coronary artery bypass; retinal pigment epithelium

ÖZET Koroner baypas cerrahi sonrası gelişen bilateral akut posterior multifokal plakoid pigment epiteliopati (APMPPE) ve eşlik eden tek taraflı papilit olgusu değerlendirildi. Olgumuz 58 yaşında erkek hastada, baypas cerrahi sonrası 4. günde sol gözde bulanık görme şikayeti nedeni ile yapılan gözdibi muayenesinede bilateral arka kutupta çok sayıda krem-beyaz plakoid lezyonlar ve sol optik diskte papilit saptandı. Floresein anjiografide plakiod lezyonlar erken fazda hipofloresan, geç fazda ise hiperfloresan olarak izlendi. Optik koherans tomografide lezyonların lokalizasyonunda retina pigment epitelinin sınırlarının bozulduğu saptandı. Etyopatogenezi tam olarak aydınlatılamamış olan APMPPE'nin koroner baypas cerrahi sonrası da saptanması, muhtemel etiyoloji açısından önemli olabilir. Bu tablonun oluşmasında direkt cerrahinin sorumlu olabileceği veya cerrahinin neden olduğu stres faktörlerinin duyarlı bireylerde tabloyu tetikleyebileceğini düşünmekteyiz. Kesin sonuçların elde edilebilmesi için spesifik immünogenetik çalışmalar gerektiği kanaatindeyiz.

Anahtar Kelimeler: Koroner arter baypas; retina pigment epiteli

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Acute posterior multifocal placoid pigment epitheliopathy (APMPPE), was first described by Gass in 1968, is an acquired inflammatory disorder affecting the choroidal vessels.[1] The disease is self-limited and is characterised by multiple yellow-white placoid subretinal lesions of the posterior pole.[2] The lesions are frequently bilateral, mostly affects young adults (20-40 years) and typically resolve in weeks to months.[3,4] The pathophysiology of APMPPE is speculative and is thought as an inflammatory vasculitis that affects the choroidal vessels. It is evaluated as focal choroidal vasculopathy.[5,6] Retinal pigment epithelium is affected by

the inflammation of the choroid.[3,7] The similar results were demonstrated in some systemic diseases including Wegener granulomatosis, systemic necrotising vasculitis, cerebral vasculitis, and insect bites.[7-9] Scleritis, serious retinal detachment, retinal vasculitis, papillitis, and Harada disease are the ocular disorders associated with APMPPE.[10-13]

The present study investigated an APMPPE case that occurred after coronary bypass surgery. As far as we know, no APMPPE case after cardiac surgery or any other surgery has been reported before. Our case is the first report in the literature.

CASE REPORT

A 58-year-old man underwent bypass surgery for three vessels due to subacute inferior myocardial infarction. Four days after the surgery, the patient consulted to our clinic due to vision loss. There was no vision loss in his previous history. In his ophthalmologic examination: Eye movements were free in every direction in both eyes, and lids are normal. His left eye had reactive afferent pupillary defect. His right eye vision was 1.0 (-0.5 D), and his left eye vision was at the hand-movement level (-1.25 D). In biomicroscopic examination anterior segment structures were normal. The results of the fundus examination showed multiple yellowish lesions above the retina, some of which spread to the whole retina. Majority of the lesions were located at the equatorial region. Left optic disc margins were blurred and papilla were edematous (Figure 1). Fundus fluorescein angiography (FFA) and optical coherence tomography (OCT) were performed. The FFA results showed hypofluorescence lesions in early phases (Figure 2), and hyperfluorescence in late phases (Figure 3). The FFA image of the left optic disc showed leakage in the early

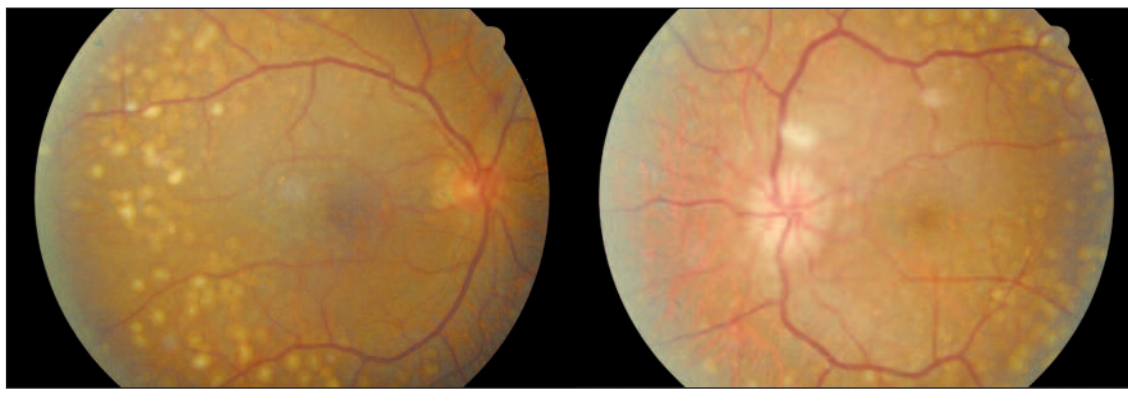

FIGURE 1: In the first diagnosis of the patient, bilateral diffuse placoid lesions, left optic disc edema, and peripapillary exudates were seen.
(See color figure at http://www.turkiyeklinikleri.com/journal/turkiye-klinikleri-journal-of-case-reports/ 1300-0284/tr-index.html)

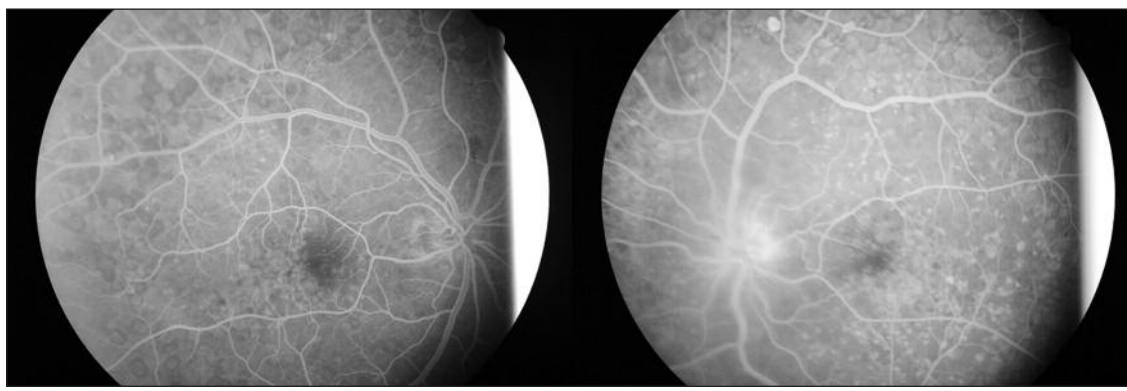

FIGURE 2: Placoid lesions were hypofluorescent in early phases of the FFA, and the left optic disc was dyed.

phases and stains in the late phases. In OCT images, placoid lesions were seen at the subretinal space, and lesions orginated from the choroid (Figure 4). According to these findings, the patient was diagnosed with APMPPE. Blood samples were taken from the patient to evaluate blood count, eritrocyte sedimentation rate, liver function, C-reactive protein, blood urea nitrogen, creatinine, rhomatoid factor, venereal disease markers, antinuclear anticore (ANA), dsDNA, P-ANCA (myeloperoxidase-ANCA), Borellia lg G and lg M, HIV, toxoplasmosis lg M and lg G, and anticardiolipin anticores. Cranial tomography and chest x-ray were also performed. All test results were normal. With the test results, bypass surgery was considered, but no treatment was given to the patient. Ophthalmological examination 2 months after the diagnosis showed that the patient's vision was 1.0 (-0.5 D) on the right eye and 0.7 (-1.25 D) on the left eye. The anterior segment was normal bilaterally. The fundus examination also revealed paled placoid lesions, left optic disc edema was resolved and became pale (Figure 5). Patient's informed consent was taken for all interventions and presentations.

DISCUSSION

The etiopathogenesis of the APMPPE is not known. Different theories were suggested for etiopathogenesis. The first of these theories was presented by Gass in 1968.[1] According to Gass, a viral agent causes acute cellular response against the choroid, and retinal pigment epithelium was responsible for the disease. In another study, Van Buskirk suggested late vasculopathy as an etiologic factor.[14] Vedantham and Ramasamy explained that retinal vascular endothelium and choroidal vascular structures play a role in the pathogenesis of the disease.[7] Another study pointed out that the underlying mechanism is believed to be an obstructive vasculi-

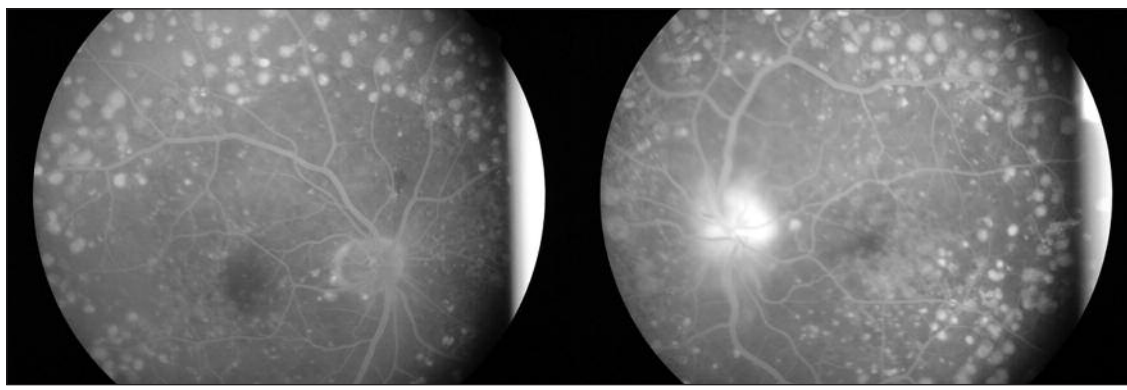

FIGURE 3: Placoid lesions were hyperfluorescent bilaterally in late phases of the FFA, and the left optic disc was dyed more.

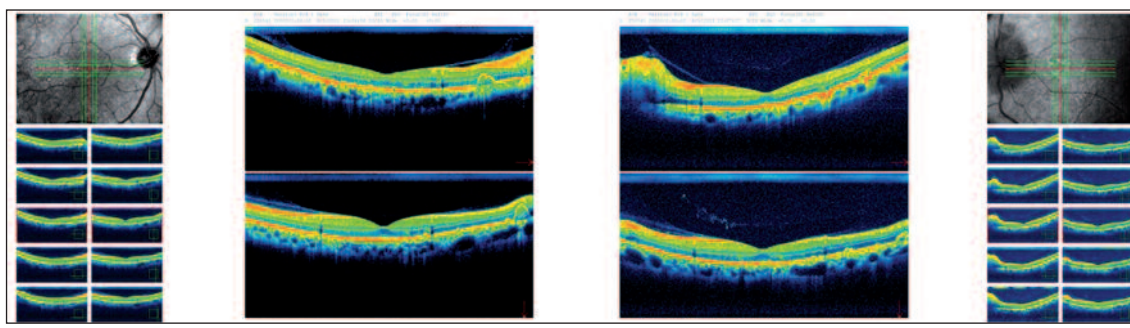

FIGURE 4: RPE borders distorded by placod lesions in optical coherence tomography.
(See color figure at http://www.turkiyeklinikleri.com/journal/turkiye-klinikleri-journal-of-case-reports/ 1300-0284/tr-index.html)

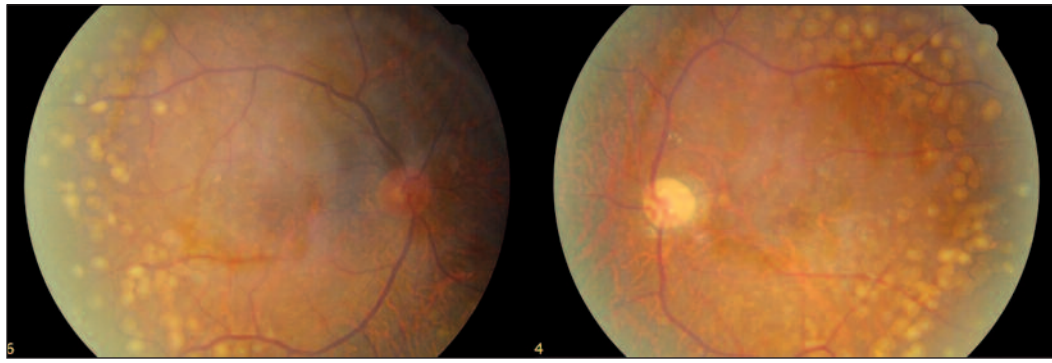

FIGURE 5: 2 months after the diagnosis: Placoid lesions were blurred, and the optic disc edema was lower than the first diagnosis time.

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tis caused by sensitive T lymphocytes and causing nonperfusion of the terminal choroidal lobules in the posterior pole of the eye.[15] This study showed late type hypersensitivity associated with sarcoidosis, pulmonary tuberculosis, and schistosomiasis. In our case, the physical examination and laboratory tests did not reveal any disorder that may cause APMPPE. Surgery-induced acute stres probably caused APMPPE, but we could not explain its mechanism. Acute retinal pigment epitheliopathy, birdshot retinopathy, punctate internal coroidopathy, serpinous coroiditis, multifocal coroiditis and geographic coroidopathy should be considered in differential diagnosis of the disease.

In the litrature, APMPPE was explained with unilateral or bilateral papillitis.[3] Reports claim that choroidal vasculitis in the peripapillary area may cause papillitis in immunogenetically sensitive patients. In our case, there was papillitis in the left eye, but we could not explain its mechanism.

As a result, it is thought that APMPPE is a vasculitis trigerred by different agents in susceptible patients. In our case, we thought that coronary bypass surgery or acute stress factors caused by surgery were the responsiple agents for APMPPE. However, we need specific immunogenetic research studies to explain its pathophysiology.

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