Bilateral Vision Loss in a Child Patient Due to Malignant Hypertension

Çocuk Hastada Malign Hipertansiyon Nedeniyle Ortaya Çıkan İki Taraflı Görme Kaybı

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ABSTRACT

A fourteen years old female patient was admitted to our clinic with bilateral vision loss for 3 days. Visual acuity was 20/32 in right eye and 20/640 in left eye. Macular star and optic disk edema were observed in both eyes. Systemic blood pressure was measured as 260/140 mmHg, and diagnosed as hypertensive retinopathy. Malignant hypertension is a rare disease in childhood and hypertensive retinopathy in these patients is an urgent condition for diagnosing and treating.

Key Words: Vision loss, malignant hypertension, child, chronic renal failure.

ÖZ

On üç yaşında kız hasta her iki gözünde 3 gündür devam eden görme kaybı şikayeti ile kliniğimize başvurdu. Sağ gözdeki görme keskinliği 20/32 iken sol gözde 20/640 idi. Her iki gözde maküler star ve optik disk ödemi izlendi. Sistemik kan basıncı 260/140 mmHg olarak ölçülen hastaya hipertansif retinopati tanısı kondu. Malign hipertansiyon çocukluk çağında oldukça nadirdir ve bu hastalarda hipertansif retinopati tanı ve tedavisi acildir.

Anahtar Kelimeler: Görme kaybı, malign hipertansiyon, çocuk, kronik böbrek yetmezliği.

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INTRODUCTION

While systemic hypertension in childhood may appear secondary to renal and endocrinological diseases, malignant hypertension (MH) is a very rare condition in this age group.[1] Unfortunately most of the patients with MH are admitted to clinic with unilateral or bilateral vision loss. Also visual hallucinations, and diplopia may be seen in these patients. Here we report a case referred to our clinic with bilateral vision loss, and diagnosed as hypertensive retinopathy (HR) related with chronic renal failure.

CASE REPORT

A fourteen years old female patient was admitted to our clinic with painless, bilateral vision loss for 3 days. She had no systemic disease or medication history. Best corrected visual acuity (BCVA) was 20/32 in right eye and 20/640 in left eye. Intraocular pressure and light reflexes were normal in both eyes. Bilateral anterior segment examination was normal. Fundus examination revealed apparent macular star and optic disc edema in both eyes (Figure 1). Bilateral serous retinal detachment and macular edema were observed in optic coherence tomography (OCT) (Figure 2a,b). Systemic blood pressure (SBP) was measured as 260/140 mmHg, and the patient was hospitalized. SBP was gradually decreased by medical treatment (Doksazosin, Nifedipin, and Captopril). Laboratory tests and radiological imaging were done to find possible etiologic reasons. While urea [46.9 mg/dl (10.7-38.5)], creatinine [(1.04 mg/dl (<0.9)], parathormone [163 pg/ml (9-52)], renin [26.8 mng/ml (0.5-3.3)], and aldosterone [459 pg/ml (20-220)] increased, potassium [(2.86 mEq/L (3.1-5.1)], and phosphor [2.75 mg/dl (4.5-5.5)] decreased. Renal ultrasonography and scintigraphy revealed bilateral parenchymal irregularity of kidneys. Diagnosis was established as early stage chronic renal failure secondary to pyelonephritis sequel. After medical treatment had started, SBP decreased to 130/90 mmHg and ophthalmic findings regressed. Final BCVA was 20/20 in right eye and 20/32 in her left eye at the end of the sixth month. Posterior segment findings regressed and serous retinal detachment completely resolved (Figure 2c,d).

DISCUSSION

Although the incidence of systemic hypertension in childhood is 1 to 3%, the hypertensive retinopathy rate is not clearly known.[2] An 18% incidence of HR in hypertensive child was reported in a British cohort study in 2013.[3] Therefore, all hypertensive children should also be examined by ophthalmologists.

Frequency of secondary hypertension in childhood is higher than frequency of primary hypertension. Renal diseases are the most common etiologic factor of hypertension in childhood. Besides, endocrinological diseases can be related with systemic hypertension in children.[1] Keith and et al.,[4] first described malignant hypertension as retinal involvoment, hypertension, and renal dysfunction. Eye findings are divided into four stages, and patients with papillary edema are classified as stage 4. In our case, the patient was admitted with bilateral vision loss caused by hypertensive retinopathy, and was diagnosed as chronic renal failure with the result of investigations carried out.

Hypertension causes arteriolar narrowing, intimal thickening, medial hyperplasia, and hyaline degeneration in adults.[5] Thus, cotton wool spots occur due to hemorrhage, exudation, and ischemia in nerve fiber layer. Soft, and hard exudates, preretinal hemorrhages, macular star, and optic disc edema are ophthalmological findings of systemic hypertension. However, hypertensive retinopathy occurring in childhood is known very little.

Hypertensive retinopathy can be confused with neuroretinitis having signs of optic disc edema, and macular star, so that will cause difficulties in separation of these diseases.

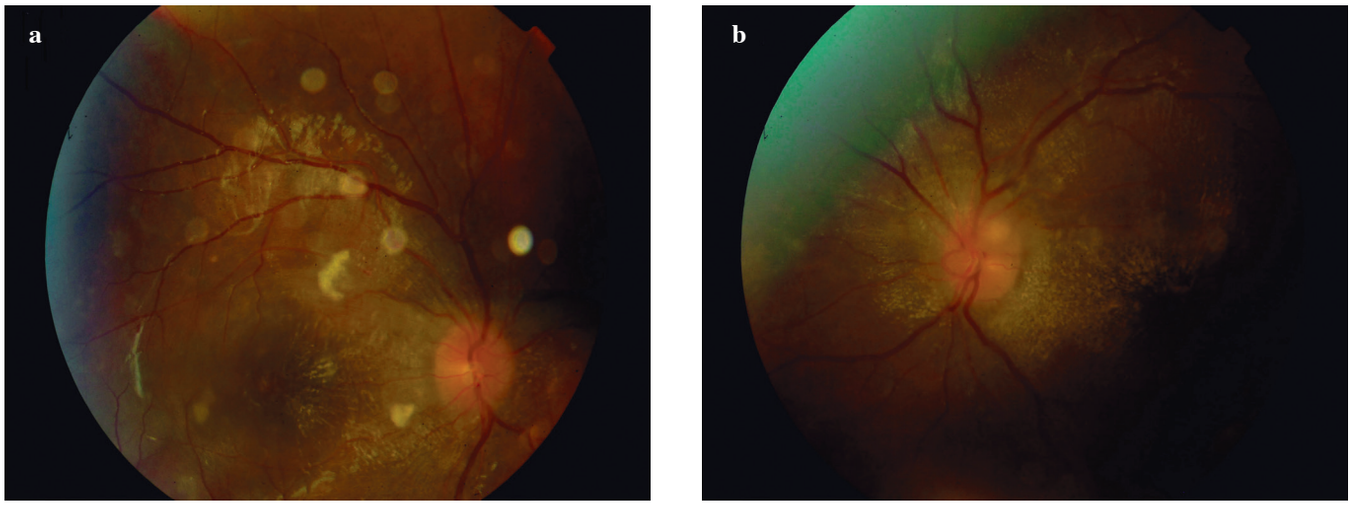

Figure 1: *Fundus examination revealed apparent macular star and optic disc edema in both eyes.*

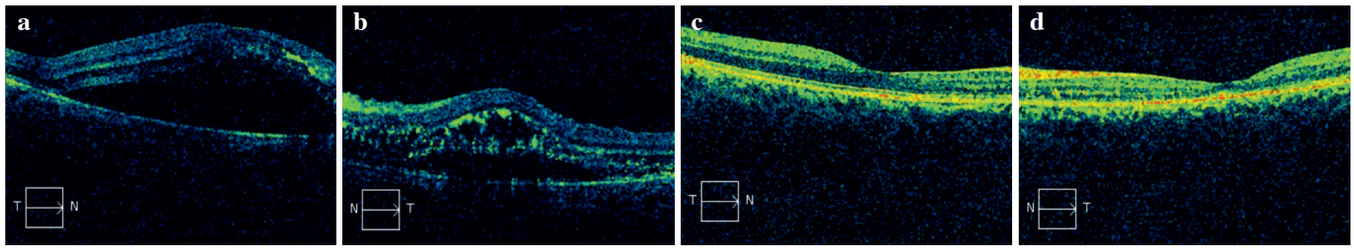

Figure 2a-d: *Bilateral serous retinal detachment and macular edema were observed in OCT (a-b). Posterior segment findings regressed and serous retinal detachment completely resolved (c-d).*

Neuroretinitis is typically unilateral, shows spontaneous regression, and usually occurs due to infection. Anterior and posterior segment inflammation findings are together with cells in vitreous at this disease.[6] The patient was diagnosed as hypertensive retinopathy, not neuroretinitis with bilateral findings, absence of any signs of inflammation, and the high systemic blood pressure measured. Another factor supporting diagnosis is regression of clinical symptoms, and increased vision with antihypertensive treatment. Therefore, systemic blood pressure must be measured in patients presenting with a similar case.

We should know that visual loss might be progressive and irreversible with the delay of diagnosis and treatment of patients. In this case, the patient lost vision of her left eye and became irreversible due to the late admittance to the clinic. Another important point about the main treatment is to reduce systemic blood pressure in a gradual and controlled manner. Rapid and uncontrolled decreasing of systemic blood pressure can cause optic nerve head infarct.[7]

As a result malignant hypertension is a rare disease in childhood and hypertensive retinopathy in these patients is an urgent condition for diagnosing and treating.

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