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Retrobulber Neuritis Post Nephrectomy

Gilbert W. S. Simanjuntak,[1,2] * Reinne C. Natali, [1] Golda A. M. Simanjuntak[3]

[1] Departemen Penyakit Mata FK UKI, [2] UPF Mata RS PGI Cikini,
[3] Fakultas Kedokteran Universitas Sumatera Utara

Abstract

A 52 years old lady was referred due to a sudden decrease of vision. She underwent nephrectomy two days before being admitted to the Department of Ophthalmology. The examination showed that the right eye visual acuity was 1/60, left eye 20/70, ascertained with Marcus Gunn pupil reflex. Electroretinography examination revealed a retrobulber optic nerve disorder, diagnosed as neuritis. She received medication of methylprednisolone injection, followed by oral. On the last examination right eye visual acuity was 4/60, left eye 20/30 with S +0,50, and no more inflammation.

Keywords: retrobulbar neuritis, nephrectomy, complication

Neuritis Retrobulbar Pasca Nefrektomi

Abstrak

Seorang perempuan berusia 52 tahun datang dengan keluhan tajam penglihatan turun mendadak. Penderita mengalami nefrektomi dua hari sebelumnya, dan kemudian dirujuk ke Departemen Penyakit Mata. Pada pemeriksaan ditemukan visus mata kanan 1/60 dan visus mata kiri 20/70 yang disertai refleks pupil Marcus Gunn. Pemeriksaan elektroretinografi memperlihatkan hasil gangguan di nervus optikus retrobulber. Pasien dengan neuritis retrobulber diterapi dengan injeksi metilprednisolon, dilanjutkan pemberian oral. Pada pemeriksaan terakhir didapatkan visus mata kanan 4/60 dan mata kiri 20/30 dengan S +0,50, dan tidak ditemukan lagi tanda peradangan.

Kata kunci: neuritis retrobulber, nefrektomi, komplikasi

*GWS: Penulis Koresponden; E-mail: retinaid@yahoo.com

Introduction

Patients who came with a sudden decrease in visual acuity in both eyes can be caused by optic nerve diseases or disorders behind the chiasm. Optic neuritis is an inflammatory diseases as a result of processes that affect the optic nerve, characterized by an acute vision decrease, accompanied by a central scotoma. Retrobulbar neuritis may be a first sign of multiple sclerosis. As many as 20-40% of 25,000 patients with retrobulber neuritis will suffer from multiple sclerosis within 10 years.[1-5]

Optic neuritis can be classified anatomically as seen by funduscopy into (1). Retrobulbar neuritis. In this situation, the optic nerve papill has a normal appearance at least in the early course of the disease because the tip of the optic nerve is not involved. This is the most common type found in adults and is often associated with multiple sclerosis disease; (2). Papillitis. In this condition pathology process affects the end of the optic nerve pathology primarily or secondarily, associated with retinal inflammation spreads. Papillitis is characterized by hyperemia and optic nerve head swelling and can be accompanied by flame-shaped perpapillary bleeding. Cells in the vitreous posterior is visible (vitritis). Papillitis is the type of optic nerve disorder which may commonly found in children, although it can be also occured in adults. 3). Neuroretinitis. This is characterized by inflammation of the lining of the retinal nerve accompanied by star figure on the macula, but rarely a manifestation of demyelination.[2]

Based on etiology, optic neuritis is also classified as 1) Demyelination, which is the most frequent cause, 2). Parainfectious, which occurs after viral infection or immunization, 3) Infectious, which can be associated with sinus disease or related cat scratch fever, lyme disease, cryptococcal meningitis in AIDS patients, and herpes zoster, 4). Non-infectious, which can be caused by sarcoidosis and systemic autoimmune diseases such as systemic erythematosus lupus, polyarteritis nodosa, and other vasculitis diseases[2]

In optic neuritis, demyelination is a pathological process, where myelin sheath is absent in the nerve fibers. Myelin is "eaten" by microglia and macrophages. Demyelinating disease will break the nerve conduction to get to the white substance (dura mater) and to the brain, brainstem, and spinal, but peripheral nerves are not involved[2-4]

Case Report

Mrs. S, 52 years old, was referred to the Department of Ophthalmology with sudden decrease of visual acuity in both eyes (OU), especially the right eye (OD), two days after nephrectomy. Anesthesia was done with premedication (midazolam injection, ondansentron, fentanyl) and standard medications (atracurium injection, propofol). The patient's condition during the operation was under control, unremarkable. The eye examination after surgery found visual acuity was 1/60 in the right eye and 20/70 in the left. Anterior segment, revealed a thin cataract but was not corresponded to visual impairment, and Marcus Gunn pupil (+) in the right eye. Funduscopic examination showed no abnormalities. Electroretinography examination (Roland Consult™) showed that the results of visual evoked potential patterns (VEP) diminished in the right eye, the electroretinography (ERG) pattern in the right eye and macular function declined. Kampimetri (Carl Zeiss™) showed the total dark right eye, left eye showed an overview of central scotoma area. A CT scan showed no significance clinically. Patients were given 3 x 500 mg methylprednisolone injections for four days and a follow up of 1x 32 mg oral administration for seven days.

Two weeks later the vision grew brighter, visual acuity was 4/60 in the right eye and 20/60 in the left. The anterior segment examination found relative afferent pupillary defect (RAPD) OD (+) but opacification of the lens (cataract) was not increased; intraocular pressure on the right eye was 12 mmHg and 16 mmHg on the left. The examination of the posterior segment found relatively pale optic disc on both eyes, while other findings were within normal limits. It is in accordance with neuritis retrobulber in repair.

In the fourth week of control, visual acuity was 4/60 in the right eye and 20/60 S + 1:00 pinhole 6/9 in the left. The patient was asked to control her condition if there is a complaint. The patient came back eight months later with the right eye visual acuity of 1/60 and left eye of 20/30. Right eye decreased visual acuity was associated with the cataract condition she suffered. In the meantime, preparation for the right eye cataract surgery was made.

Discussion

Neuritis retrobulber diagnosis is usually made based on several considerations, such as, age. Neuritis optic is commonly found in adults aged between 18 and 45 years, with an average of 30 -35 years old, and more commonly found in women. A different condition in this particular patient is due to the nephrectomy procedure beforehand and followed by the retrobulber neuritis.

Most patients experience visual phenomenon characterized by a flash of white or colored glow, so do discomfort or pain around the orbit and, sometimes, increasing pain when the eyeball is moved. Patients may experience severe vision decrease within a few days. Headache in the frontal part and mushy eyeballs can also be found.[6]

The discovery of one or more of the following signs may lead to retrobulber neuritis: a decrease in visual acuity between 6/18 and 6/60, that associated with optic nerve dysfunction such as the aferent pupillary defect (RAPD), optical disc looks normal on funduscopic examination but pale in the eye disc which suffered from optic neuritis beforehand. In addition, there is a visual field defect, accompanied by a decrease in the diffuse central visual field as much as 30°. This follows a defect in nerve fiber coil with central scotoma.[4] This patient experienced a decreasing visual acuity, with Marcus Gunn reflexes, and a normal funduscopic picture. Confirmation is done with campimetric and ERG results.

Generally, deterioration of visual acuity will occur within a few days to two weeks, and improve within two to four weeks. This also occurs in patients with steroids medication. Initial improvement is generally fast and then the healing process will stop for a moment, then continue again within 6-12 months. On clinical examination, patients who come with a sudden decrease in visual acuity in both eyes should be asked to close one eye to ascertain whether the cause is only one eye or homonimus anopsia in both eyes. [3]

The main problem in patients is sudden decrease in visual acuity in both eyes after nephrectomy, especially in the right eye. It is hard to explain pathophysiology of neuritis after nephrectomy. To the best of our knowledge, there has been no report on this matter in national or international journals. Surgery may play an important role in sudden decrease in visual acuity, as in the case of hysterectomy following neuritis.[7] On physical examination, it is found that the right eye visual acuity is worse than the left eye. There is a Marcus Gunn pupil in the right eye with a total dark campimetric. When the Marcus Gunn pupil is without other abnormalities, several possible diagnoses can be discarded. In this case, pupillary examination is important to rule out the possibility of malingering. In patients with sudden blindness with malingering, isocoric pupils are found. To rule out the possibility

of a tumor in the chiasm, CT scan of the head and orbit must be administered. The scan results of this patient showed no results of no abnormalities.

Electroretinography examination is conducted to see the function of rod and cone cells to see the impaired light sensitivity. Macular function is found decreasing; the result of ERG pattern also illustrates the pathways of the macula to the optic nerve. Pale optic disc marks retrobulbar optic nerve disorders. The provision of high-dose methylprednisolone injection is the initial treatment. Patients come two weeks later for control and there were improvements in visual acuity. Intraocular pressure measurement is done to evaluate the side effects of methylprednisolone administration. Medication is continued because there is a significant improvement in visual acuity but does not result in increasing intraocular pressure.

Treatment in neuritis and neuromielitis develops besides steroids. It is based on the understanding that patients with steroid treatment have the same recurrence rate with those without steroids. Lenalidomide[8] as immunomodulatory drugs, or immunosupresor rituximab[9] give different results. However, in general, steroids are still the most commonly used drug. Results of treatment with steroids in some countries provide similar results.[10,11]

The patient who came two months afterwards showed improvements in visual acuity. Decreasing visual acuity that occurs right after two months is more likely as the rest of the optic nerve disorders accompanied by cataracts. Eight months later evaluation found no recurrence of the neuritis and the patient was ready for cataract surgery.

Conclusion

Retrobulbar neuritis can be occured immediately after nephrectomy and standard treatment in neuritis gives good results.

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