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A Rare Case of Posterior Ischemic Optic Neuropathy after Appendicectomy

Aakanksha Sharma[1], Neha Mohammed[2], Indu Bala[3*]

[1]Medical officer, Department of Ophthalmology, Zonal hospital, Dharamshala, Himachal Pradesh, India.
Email: sharmaaakanksha1987@gmail.com,
Orcid ID: 0000-0001-9784-1495
[2]Medical officer, Department of Ophthalmology, Civil hospital Kangra, Himachal Pradesh, India.
Email: nehamohammed0@gmail.com,
Orcid ID: 0000-0002-7220-8199
[*3]Medical officer, Department of Ophthalmology, Civil hospital Kangra, Himachal Pradesh, India.
Email: ibala417@gmail.com,
Orcid ID: 0000-0003-4292-6947

*Corresponding author

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Abstract

Ischemic optic neuropathy is classified into anterior and posterior ischemic optic neuropathy depending upon the part of optic nerve involved. In anterior optic neuropathy, optic nerve head is involved and in posterior ischemic optic neuropathy(PION) retrobulbar portion is involved. There is sudden loss of vision in both the entities but there are optic disc changes in anterior optic neuropathy while in posterior ischemic optic neuropathy optic disc is normal initially. Etiologically, posterior ischemic optic neuropathy is divided into non arteritic non-surgical, arteritic and perioperative non arteritic posterior ischemic optic neuropathy.

Keywords:- Posterior Ischemic Optic Neuropathy, Appendicectomy.

INTRODUCTION

Ischemic optic neuropathies are the major cause of impaired vision among the elderly population, although no age is immune. Posterior ischemic optic neuropathy is less common than anterior ischemic optic neuropathy.[1] Only about 10% cases are reported due to posterior ischemic optic neuropathy. It is most common in 50 – 60 years of age group but can present early if risk factors are present. There is involvement of retrobulbar optic nerve which is supplied by pial vessels. Involvement of these vessels lead to ischemia of retrobulbar optic nerve leading to sudden and painless vision loss. In the management of posterior ischemic optic neuropathy, the first crucial step with patients aged 50 and over is to identify immediately whether it is arteritic or not because arteritic posterior ischemic optic neuropathy is an ophthalmic emergency and requires urgent treatment with high dose steroid therapy to prevent any further visual loss in one or both eyes.[2] There is no satisfactory treatment for surgical PION, except to take prophylactic measures to prevent its development.

CASE REPORT

A 30-year female presented with sudden painless loss of vision in the left eye one day after appendicectomy. She noticed the vision loss upon waking up in the morning. There was no history of ocular trauma, ocular surgery and use of glasses in the past. There was no history of fever, chest pain, shortness of breath, altered

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consciousness. There was also no history of any systemic disease, any drug intake or substance abuse. Intraoperative period of the patient was uneventful. Family history of the patient was insignificant. On examination, visual acuity in right eye was 6/6 and in the left eye it was hand movement close to face. Relative afferent pupillary defect was present in the left eye. Rest of the anterior segment examination was normal. Posterior segment examination was also normal. Intraocular pressure was 16 mm Hg in both eyes. Hematological investigations of the patient were within normal limits. On carotid Doppler examination, there was decreased velocity in bilateral carotid vessels suggestive of carotid plaque. MRI (Magnetic resonance imaging) brain was normal. Two-Dimensional echography was also normal. Patient was started on tablet aspirin 75 mg and tablet atorvastatin 20 mg once a day. Patient came to follow up after six weeks [Figure 1]. Visual acuity was same as on the day of presentation. On fundus examination, pale disc was documented in the left eye.

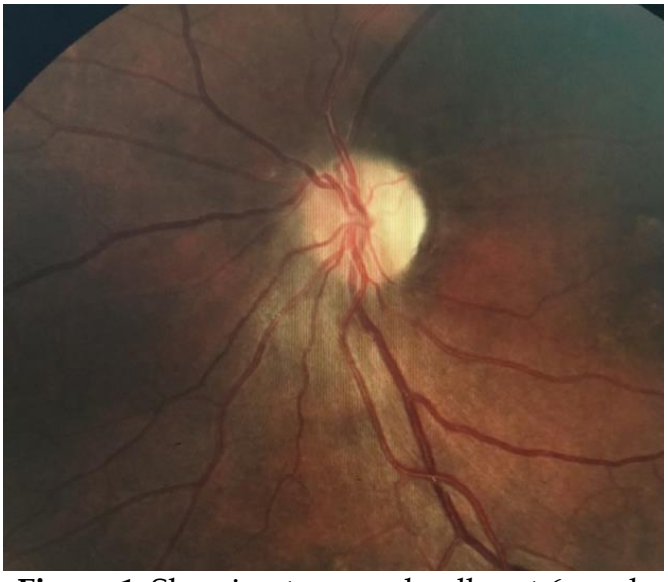

Figure 1: Showing temporal pallor at 6 weeks

DISCUSSION

On the basis of blood supply, the optic nerve can be divided into two regions: the anterior part of optic nerve head, which is supplied primarily by the posterior ciliary artery circulation and the rest of the optic nerve, which is supplied by multiple sources.[3] Blood supply to these parts involve contributions from many arterial branches. Thus, it may not be possible that pathology of posterior ischemic optic neuropathy be localized to any one artery or location. Among the three main causes of posterior ischemic optic neuropathy presentation of arteritic form is rare and there is profound vision loss and it occurs generally in elderly. Arteritic posterior ischemic optic neuropathy is associated with giant cell arteritis involving posterior ciliary arteries commonly. It is less common condition than arteritic anterior ischemic optic neuropathy. Perioperative posterior ischemic optic neuropathy is associated with multiple risk factors which include prolonged intraoperative arterial hypotension, postoperative anemia, increased intraocular pressure, blood loss and rarely with direct orbital compression by prone position.[4] While intraoperative mean arterial pressure can usually be maintained, an increase in intraocular pressure can lead to decreased ocular perfusion and thus produce ischemia, since mean ocular perfusion pressure is equal to mean arterial pressure minus intraocular pressure. Patient usually presents with bilateral visual loss or even complete blindness, which is usually permanent; therefore, having medicolegal importance. In Patients with surgical PION visual loss is discovered as soon as they are alert postoperatively. Surgical PION usually leads to bilateral severe visual loss or

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even complete blindness and it is usually permanent. The management of surgical PION is usually to take prophylactic measures to prevent its development, because once the visual loss occurs, it is usually bilateral, severe and irreversible. Non arteritic type is commonly associated with systemic disorders like arterial hypertension, diabetes mellitus, ischemic heart disease, cerebrovascular disease, carotid artery and peripheral vascular disease and migraine.1 Thus the pathogenesis is multifactorial in nature. Defective autoregulation of the optic nerve and nocturnal arterial hypotension is also documented as the causative factor of non arteritic posterior ischemic optic neuropathy. Vision loss is sometimes discovered upon waking up in the morning. As systemic risk factors play a part in the etiology of non arteritic PION, management of these systemic factors is important to reduce the risk of second eye involvement.

CONCLUSIONS

Diagnosis of posterior ischemic optic neuropathy is clinical. It is basically a diagnosis of exclusion. The presence of acute vision loss, optic nerve related visual field defects in the eye with vision loss, relative afferent pupillary defect, initially normal optic disc with development of optic disc pallor at 6-8 weeks. There is no established treatment option for perioperative posterior ischemic optic neuropathy. Steroids are recommended only in nonarteritic type showing some improvement in visual acuity and visual field. Spontaneous improvement can occur in non arteritic type without any treatment.

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