

Research Article

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Zona Pigment Glaucoma: Surgery or Medical Treatment?



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Abstract

Hepes Zoster Ophthalmicus (HZO) does not a fatal cause but a blind cause as well as prolonged pain lead to disturbance and difficulty in treatment for patients and may be a marker for AIDS particularly in young persons. Zona Glaucoma or Zona Pigment Glaucoma (ZPG) commonly caused by uveitis with or without blockage pupil or obstructed trabecular meshwork. Accumulation of macrophages in severe inflammation over a short period of time may acutely obstruct the meshwork and result in transient elevation of intraocular pressure in association with exercise of dilation of pupil.

In this paper three typical cases of ZPG were treated. The first was young patient with HIV (+), trabeculectomy was done; the second and third cases were elderly patient HIV (-), without glaucoma surgery. Among of 2 medical treatment cases: one was treated with steroid and the other was treated with antiviral drug. These 3 patients have restored vision and have normalized intraocular pressure, and some satisfying results were reported here after one year follow-up. Some considerations on HZO were discussed in this paper for General Practitioners and Eye Doctors.

Keywords: Zona pigment glaucoma; Trabeculectomy; Medical treatment

Abbreviations: HZO: Hepes Zoster Ophthalmicus; ZPG: Zona Pigment Glaucoma; ZG: Zona Glaucoma; IOP: Intraocular Pressure; OAG: Open Angle Glaucoma; PCR: Polymerase Chain Reaction

Introduction

Hepes Zoster Ophthalmicus (HZO) does not a fatal cause but a blind cause as well as prolonged pain lead to disturbance and difficulty in treatment for patients and may be a marker for AIDS particularly in young persons. Zona glaucoma or (ZG) commonly caused by uveitis with or without blockage pupil or obstructed trabecular meshwork. Accumulation of macrophages in severe inflammation over a short period of time may acutely obstruct the meshwork and result in transient elevation of intraocular pressure in association with exercise of dilation of pupil.

We have treated three typical cases of zona glaucoma. The first was young patient with HIV (+), trabeculectomy was done; the second and third cases were elderly patient HIV (-), without glaucoma surgery. Among of 2 medical treatment cases: one was treated with steroid and the other was treated with antiviral drug. According to the Mayo Clinic, evidence from clinical trials shows that treatment with steroids tends to be more successful than

treatment with antivirals. These 3 patients have restored vision and have normalized intraocular pressure, and some satisfying results were reported here after one year follow-up. So, ZPG it should be operated or medical treatment? Some considerations on HZO were discussed in this paper for General Practitioners and Eye Doctors.

Cases Report

Case 1

A 29-year-old, male, worker. Two months ago, he had an eruption in left eye accompanied with intensive pain; he was then diagnosed and treated for ophthalmic zona by eye doctors. His pain has prolonged until three weeks previously, he was treated pulmonary tuberculosis. One week before he had a severe pain in left eye and he was then admitted author's provincial hospital. Up to this time he and his family were not disclosed HIV (+) by any doctors (Figure 1).



Figure 1

General examination: 1.65meter tall; Weight: 49kg; Pulse 72/minute; Blood pressure: 120/70mmHg; Temperature: 37.5Celsius.

- a) Ocular examination: Visual acuity: 6/12 = RE, 6/60 = LE.
- b) Intraocular pressure (IOP): 17mmHg = RE; 28mmHg = LE.
- c) Right eye: normal. Left eye: injection of conjunctiva, epithelial and stroma of cornea: edema; Shallow anterior chamber; Pupil: 5mm diameter; Direct photomotor reflex to pupil: negative.
- d) No observe posterior chamber. Ocular movement: normal.
- e) Paraclinic: RBC = 2900,000cells/mm³ WBC = 5,800cells/mm³ (Neutrophile: 80%, Lymphocyte: 20%); Bleeding time = 2'; Coagulation time = 6'. HIV = Elisa (+). + Chest X-ray: opacity of 2 top of lungs.

Diagnosis: Left eye= Zona Pigment Glaucoma. on patient with HIV (+) and pulmonary tuberculosis.

Treatment: Diamox 250mmg: 2tablets x 3 times/daily and trabeculectomy on the day after.

Results:

- a) One week after surgery: Visual acuity: 6/12 = RE; 6/18 = LE; IOP=16mmHg OU.
- b) One year after surgery: Visual acuity: 6/12 = RE; 6/60 = LE; IOP = 16mmHg OU.

Case 2

A 59-year-old, female, farmer. Ten days before she had suddenly headache then located at right frontal region and 2 days follow an eruption appeared on the same site in right eye accompanied with intensive pain. She was then treated for ophthalmic zona by general practitioner. Her pain has not decreased during one-week treatment until she was admitted author's provincial hospital.

General examination: Height: 1.50meter; Weight: 55kg; Pulse: 78/minute; Blood pressure: 110/70mmHg; Temperature: 37Celsius.

- a) Ocular examination: Visual acuity: 6/9 = RE, 6/60 = LE.
- b) Intraocular pressure (IOP): 17mmHg = RE; 22mmHg = LE.
- c) Left eye: Redness and edema of upper eye lid, difficulty in movement.
- d) Injection of conjunctiva, epithelial and stroma of cornea: edema; Shallow anterior chamber; Pupil: 6mm diameter. Photomotor reflex to pupil: negative.
- e) No observe posterior chamber. Ocular movement: normal. Right eye: no abnormality detected.
- f) Para clinic: RBC = 4000,000 cells/mm³; WBC = 7,800 cells/mm³ (Neutrophil: 72%, Lymphocyte: 28%); Bleeding time = 3'; Coagulation time = 6'. HIV = Elisa (-). Glycaemia = 5, 1moll/L.
- g) Chest X-ray: nothing abnormal detected.

Diagnosis: Left eye = Zona Pigment Glaucoma.

Treatment: Steroid (dectancyl suspension 1ml) periocular injection and measurement of IOP/ morning and afternoon /daily. Results: + One day follow: Visual acuity: 6/18 = LE; IOP = 18mmHg = OS. Discharge (after one week treatment): Visual acuity: 6/12 = LE; 6/9 = RE; IOP = 17 mmHg OU. + One year after discharge: Visual acuity: 6/60 = LE; 6/12 = RE; IOP = 18mmHg OU.

Case 3

A 62-year-old, male, farmer. Five days before he had suddenly headache then located at right frontal region and 2 days follow an eruption appeared on the same area in right eye accompanied with intensive pain and he was admitted author's provincial hospital.

General examination: Height: 1.65meter; Weight: 60kg; Pulse: 80/minute; Blood pressure: 120/70mmHg; Temperature: 37Celsius.

- a) Ocular examination: Visual acuity: 6/60 = RE, 6/12 = LE.
- b) Intraocular pressure (IOP): 18mmHg = RE; 24mmHg = LE.
- c) Right eye: Redness and edema of upper eye lid, difficulty in movement.
- d) Injection of conjunctiva, epithelial and stroma of cornea: edema; Shallow anterior chamber; Pupil: 6mm diameter; Direct photomotor reflex to pupil: negative. Central opacity of cristalin capsule.
- e) Ocular movement: normal. Left eye: Central opacity of crystalline capsule.
- f) Paraclinic: RBC = 4.500,000 cells/mm³; WBC = 7,700 cells/mm³ (Neutrophile: 71%, Lymphocyte: 29%); Bleeding time=3'; Coagulation time = 5'. HIV = Elisa (-). Glycemia = 5,6mmol/L. Chest X-ray: nothing abnormal detected.

Diagnosis: Right eye = Zona Pigment Glaucoma.

Treatment: Acyclovir 200mg x 4 tablets/daily x 14 days + Acetazolamide 250mg x 4 tablets/day and monitor IOP daily.

Results:

- a) One day follow: Visual acuity: 6/12 = RE; IOP = 20mmHg = RE. Discharge (after one week treatment): Visual acuity: 6/9 = RE; 6/9 = LE; IOP = 17mmHg OU.
- b) One year after discharge: Visual acuity: 6/9 = RE; 6/9 = LE; IOP = 17mmHg OU.

Discussion

Zona Pigment Glaucoma (ZPG)

ZPG commonly caused by uveitis with or without blockage pupil or obstructed of trabecular meshwork. Accumulation of macrophages in this severe inflammation over a short period of time may acutely obstruct the meshwork and result in transient elevation of IOP in association with exercise of dilation of pupil [3,4]. Uveitis may be occurs after some day post herpetic zona, 40% of patients may have a long period 2 years with no symptom [4].

Case 1: glaucoma occurred 2 months after zona with severe condition. Case 2: 10 days after zona with moderate condition. In uveitis 25% of patients may be changes of pigment of iris [3]. Posterior uveitis, papillitis, retinitis were rarely seen after zona [4]. Case 3: 5 days after zona with moderate condition treatment with antiviral drug and inhibition of carbonic anhydrase drug. Our diagnosis of ZPG depended on IOP. Case 1 IOP was 28mmHg; the other cases had a moderate elevation of IOP 22 & 24 mmHg on hospital admission.

In case 2, it was hardly to differentiate with trabeculitis. For treatment ZG, two problems were faced: treatment of zona and of glaucoma which consisted medical and surgical treatment. Antiviral drugs were prohibitively expensive and were not taken in case 1 and 2. Local and general steroid has to use for treatment of herpetic uveitis but the risk for open-angle glaucoma (OAG) which should be warned. According to the Mayo Clinic, evidence from clinical trials shows that treatment with steroids tends to be more successful than treatment with antivirals. Some studies showed using local steroid from 4-6 weeks increasing IOP from 6-15mmHg. Now OAG can be caused by gene TIGR (Trabecular meshwork inducible-glucocorticosteroid response gene) [6].

Surgery

According to Henry Saraux surgical glaucoma should be done in the case of ocular hypertension. Case 1: IOP 28 mmHg did not decrease and visual acuity did not restore after medical treatment, therefore trabeculectomy had been done but in case 2: IOP and visual acuity restored with steroid treatment, and then surgical glaucoma should not be done. If the IOP does not elevate and visual acuity does not restore surgical glaucoma should be done or not? In case 3: moderate condition, onset 5 days after zona, then treatment with acyclovir and acetazolamide having good result, so surgical glaucoma should not be done. Trabeculectomy in case 2 and 3 is necessary or not?

Ophthalmic Zona and HIV

In Kenya a study of Haroon Awan, Henry Alada showed 98% of AIDS patients having ocular manifestations and 23 % of ophthalmic zona with HIV (+) in the age range 8 to 47 years old. Our case 1 belonged this age group. Ophthalmic zona may be a marker for AIDS1-2. Diagnosis of typical zona is usually easy with the eruption of vesicles distributed along trigeminal nerve but in the atypical case is difficult and now with polymerase chain reaction (PCR) is a gold standard in diagnosis DNA of zona virus. The general practitioners, eye doctors should be cautious in atypical cases of zona, as well as particularly in the phrase of pre- eruption of vesicles because of transmission both zona and HIV.

Others Problems with Ophthalmic Zona

Lagophthalmia: May be caused by contracted scar of frontal skin plus upper eye lid with or without paralysis of elevator muscle. Tarsography should be done first in order to decrease the evaporating of eye watering contributed the regulation of pressure of eye liquefilm; the second is the upper lid reconstruction [7].

Strabismus: may be caused by the paralysis of ocular muscles need to be surgical correction [8].

Cornea: The decreasing of corneal sensibility post herpetic zoster may reversible or irreversible because of corneal epithelial damages. Surgeries in these patients as glaucoma, cataract has to be warning.

Iris: The paralysis of constricted sphincter of iris may lead to dilation of pupil so-called atypical Argyl Robertson syndrome [1]. Case 1: pupil did not constrict one year later; case 2: pupil constricted well after 3 months follow-up.

Classification and Treatment of Herpetic Neuralgia

(Table 1).

Table 1:

Acute herpetic neuralgia (AHN)	Post herpetic zoster neuralgia (PHN)
AHN < 3 months	PHN: > 3 months
prodrome vesicles	during: > 3 months to years
phrase of recovery	Intermittent stop
Treatment: AHN	PHN
Antiviral drugs: Acyclovir...7days	Anti-depressive drug: Imipramine
Prednisolone 40mg/daily/2 weeks	Aspirin, Capseine
Analgesics: narcotic & non-narcotic	Physiotherapy
Block sympathetic drugs	anticonvulsive drugs: Carbamazepine

Prevention

Adults 60- year-old and over should have a single dose of zoster vaccine whether they have had herpes zoster or not. This vaccine has been shown to decrease the incidence of zoster [9,10].

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