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Case Report

A Case Report on Seasonal Hyperacute Pan Uveitis (SHAPU) with Good Visual Prognosis

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Abstract

A mid-twenties male experienced redness and decreased vision in his left eye. He was admitted to the hospital with normal intraocular pressure in both eyes and ocular structures in his right eye whereas, in his left eye, the lid was edematous, hyperemic conjunctiva, muddy iris, and sluggishly reactive pupil with visual acuity of 6/24. Ultrasonography revealed anterior vitreous exudates. The patient was diagnosed with SHAPU in Left Eye. The patient underwent an anterior chamber wash, intracameral antibiotics, and intravitreal antibiotics under local anesthesia, and was admitted to the hospital for 7 days. On the seventh day, the vision improved to 6/12P in LE. The patient was discharged, prescribed medications, and asked to follow up in one month. After a month, the LE showed a completely restored vision, with normal ocular structures in the RE.

Keywords: Seasonal Hyperacute Pan Uveitis; Visual Prognosis; AC Wash; Intracameral Antibiotics; Intravitreal Antibiotics; Vitreous Exudates

Abbreviations

AC: Anterior Chamber; DVA: Distance Visual Acuity; HBsAg: Hepatitis B Surface Antigen; HCV: Hepatitis C; HIV: Human Immunodeficiency Virus; IOP: Intraocular Pressure; IV: Intravenous; IVAB: Intravitreal Antibiotics; LE: Left Eye; P: Partial; RE: Right Eye; SC: Subconjunctival; SHAPU: Seasonal Hyperacute Pan Uveitis; SLE: Slit Lamp Examination; VCD: Vancomycin, Ceftazidime and Dexamethasone

Introduction

Seasonal Hyperacute Pan Uveitis (SHAPU) is an intraocular inflammatory disease that occurs in odd-numbered years in a two-year cycle, typically between the end of monsoon and the peak of winter. It has been reported only from Nepal since 1975. Malla., *et al*. studied and described it as endophthalmitis probably caused by the Tussock moth in 1978 [1]. Later on, a detailed study was done by Upadhyay., *et al*. and named it Seasonal Hyperacute Panuveitis [2]. First recognized in 1975, similar cases with identical presentations were reported again in 1977. Since then, the definitive cyclic and seasonal pattern of the SHAPU outbreak has been recorded every odd year.

In 1977, 13 cases of SHAPU were recorded [1]. Similarly, 32 cases were reported from September 1979 to October 1982 [2], 18 from August 1999 to September 2001, 6 in the autumn of 2005, 21 from January 2007 to May 2008, 55 in 2009, 18 in 2010 [3] and 45 in 2017 [4]. Likewise, 50 cases were documented in 2019, 3 in May 2020 [5], and 135 from August to December of 2021 [6].

The disease usually starts with red eye (may or may not be associated with pain), hypopyon, fibrinoid exudates in AC, and a non-dilating pupil. Massive exudates are present in the vitreous which makes the posterior segment difficult to examine [7].

SHAPU is assumed to be caused by Gazalina species of moth. Three species of Gazalina can be found in Nepal: *Gazalina apsara*, *Gazalina transversa*, and *Gazalina chrysolopha.* However, it may not be the sole cause. Manandhar., *et al*. studied 66 cases where only 51 had a direct or indirect history of moth contact while others had either contact with another type of insect or mild blunt ocular trauma [8]. Thus, the etiology of the disease remains a mystery.

Case Report

A 24-year-old male from Pokhara visited to hospital after noticing redness and decreased vision in his LE for one day. He had a history of visiting a forest for a campfire the night before. However, he was not aware of exposure to any flies or insects. Distance visual acuity (DVA) with Snellen's chart was 6/6 in the right eye (RE) and 6/24 in the left eye (LE). Intraocular pressure (IOP) with Air puff tonometer revealed 14mmHg in RE and 11mmHg in LE. Board-H test revealed full, free, and painless mobility in both eyes. Under slit lamp examination (SLE), ocular structures of RE seemed normal whereas the edematous lid, hyperemic conjunctiva, edematous cornea, hypopyon of 2mm height mixed with blood in the anterior chamber (AC), muddy iris, and reactive pupil were noted in LE. Fundus wasn't visible so ultrasonography was performed which demonstrated anterior vitreous exudates. (Figure 1) which matched the diagnostic criteria for SHAPU includes rapid and profound loss of vision, almost unilateral, little or no pain, hypopyon, white pupillary reflex in red eye, and inability to visualize retina [9].

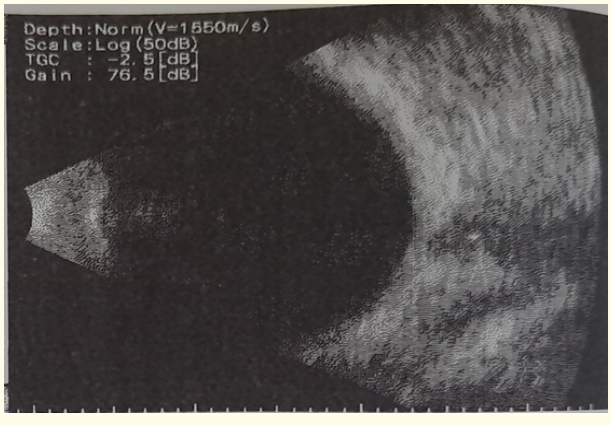

Figure 1: B-scan of left eye showing Anterior Vitreous Exudates.

Given the above condition, immediate action was taken where the patient underwent AC wash with intracameral antibiotics and vitreous tap with intravitreal antibiotics (IVAB) and steroids under local anesthesia in LE. As per SHAPU treatment protocol, Intravitreal Vancomycin (1mg/0.1 ml) + Ceftazidime (2.25mg/0.1ml) was given to cover gram-positive and gram-negative bacteria while Dexamethasone injection (0.4mg/ml) was also given to reduce inflammation due to toxins. Also, AC wash was done with a 5% balanced salt solution, and sub-conjunctival (SC) Gentamycin (0.25ml) and Dexamethasone (0.25ml) were given to the patient.

The baseline hematological investigations revealed normal values except for a slightly low red blood cell (RBC) count (5.78 million/mm^3) and hemoglobin (17.2gm/dl). The serological investigation for Hepatitis C (HCV), Human Immunodeficiency Virus (HIV), and Hepatitis B surface antigen (HBsAg) was non-reactive. Additionally, the random blood glucose test was found to be 85mg/dl and S. Creatinine to be 0.8mg/dl. Also, the aqueous and vitreous samples showed no growth of bacteria.

The patient was admitted to a semi-septic ward and was prescribed IV, oral and topical antibiotics, oral and topical steroids, and topical mydriatic drops for a week in LE.

On the second day of hospitalization, a slight improvement in DVA was noted (6/6 in RE, 6/18 in LE). IOP was 20mmHg in RE and 15mmHg in LE. SLE demonstrated normal RE and edematous cornea, AC cells and fundus were visible hazily in LE (hypopyon was completely resolved). SC Gentamycin (0.25ml) and Dexamethasone (0.25ml) were given and previously prescribed medicines were continued.

On the third day, DVA was reduced back to 6/24 in LE. IOP was normal. SLE in LE demonstrated edematous cornea, AC cells, hypopyon (reappeared), and hazy fundus. As the condition got worse, the VCD procedure was repeated after completion of 48 hours of the first procedure.

On the fourth day, DVA worsened up to 6/60 in LE, the fundus was still hazy whereas the hypopyon was resolved. On the fifth and sixth day, improvement in DVA (6/24) was noted.

On the seventh day, vision in the LE improved to 6/12P. SLE showed normal RE and LE with aqueous cells, flare, and vitreous exudates. The patient received SC Gentamycin (0.25ml), Dexamethasone (0.25ml), and the last dose of 1gm Ceftriaxone IV and was discharged.

The patient was prescribed oral and topical antibiotics steroids, and topical mydriatic drops in LE for one month and was called after 1 month.

After a month DVA was 6/6 in both eyes which implies vision was restored completely. IOP was 13mmHg in RE and 10mmHg in LE. The SLE showed normal RE ocular structures while aqueous

and vitreous cells were still present in LE. So, topical antibiotics and steroids were prescribed for a week and were called after a week.

After a week, DVA was 6/6 and SLE demonstrated normal ocular structure in both of his eyes. The patient was dispensed and asked to visit the hospital if needed.

Discussion

SHAPU is a destructive intraocular inflammatory disease causing profound vision loss associated with red eyes and white pupil [10]. It has maintained a seasonal cyclic pattern of epidemic outbreak in alternating odd years after monsoon (August to September) to the peak of winter (December to January). Besides this, SHAPU cases have also been reported in summer and even sporadic years in some parts of Nepal [11]. SHAPU has been reported from Nepal since 1975. However, some cases from Bhutan have also been reported in 2019 and 2021 [12].

Studies by Malla 1978, Upadhyay 1984, Byanju., *et al*. 2003, Manandhar., *et al*. 2008, and Shrestha 2010 regarding SHAPU have been described as occurring in the autumn in two-year cycles of odd-numbered years. However, some cases of sporadic outbreaks in the summer of even years have been reported. The first 10 cases of sporadic outbreaks were published in 1982 [2]. Later, Manandhar., *et al*. reported a few cases during the summer of 2008 and 2010 [8,13].

The difference in the presentation of even and odd year SHAPU has not been explained yet, nor the cause of unusual even year SHAPU has been known.

Most of the cases are reported after direct contact of the affected eye with a white moth [11]. However, in our case, no direct contact with the moth has been reported. So the actual etiology of SHAPU is still a mystery. It is considered to cause rapid and permanent sight loss within a week [16]. Early detection and timely intervention have saved the eye and sight of our patients.

Although SHAPU is more prevalent in pediatric patients as reported by Manandhar., *et al*. an incidence of 58.8% among children below 16 years in a total case of 34 [3] but can also affect the adult patient. Another case of adult SHAPU has also been reported from Pokhara in 2020 who had a history of exposure to a large number of white moths though hadn't had direct contact with those moths [5]. Therefore, it can be said that SHAPU not only affects the pediatric population but can also affect the adult population.

Early detection and proper intervention can help regain sight and prevent possible blindness. The patient should be kept under close monitoring to cope with possible complications. IVAB should be repeated after 48 hours if the condition does not get better. Some cases might also require core vitrectomy depending upon the severity of the disease.

Conclusion

Although SHAPU is a sight-threatening disease, early diagnosis, and prompt treatment can save vision. The close follow-up and management of possible complications can help restore the lost sight. The awareness regarding SHAPU disease should be spread worldwide, mainly focusing on susceptible areas.

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Conflict of Interest

There are no conflicts of interest.

Bibliography

1. Malla OK. "Endophthalmitis probably caused by Tussock moth". *Proceedings first National Seminar on Prevention of Blindness* 44 (1978).

2. Upadhyay M P., *et al*. "Seasonal hyperacute panuveitis of unknown etiology". *Annals of Ophthalmology* 16.1 (1984): 38-44.

3. Manandhar Anu. "Seasonal hyperacute panuveitis: an update". *Current Opinion in Ophthalmology* 22.6 (2011): 496-501.

4. Upadhyay Madan Prasad., *et al*. "The Risk Factors of Seasonal Hyperacute Panuveitis". *Ophthalmic Epidemiology* 28.3 (2021): 250-257.

5. Gurung, Haramaya., *et al*. "Sporadic summer outbreak of SHAPU in even years: Does the pattern match with the usual autumn outbreak?". *American Journal of Ophthalmology Case Reports* 24(2021): 101198.

6. Gurung, Haramaya., *et al*. "Seasonal Hyperacute Panuveitis (SHAPU) Outbreak Amidst COVID-19 Pandemic". *Ocular Immunology and Inflammation* 1-5(2023): 12.

7. Shrestha E. "A profile and treatment outcome of seasonal hyper-acute panuveitis". *Nepalese Journal of Ophthalmology : A Biannual Peer-Reviewed Academic Journal of the Nepal Ophthalmic Society : NEPJOPH* 2.1 (2010): 35-38.

8. Manandhar Anu., *et al*. "New Clinical and Laboratory Findings of SHAPU". *Nepalese Journal of Ophthalmology : A Biannual Peer-Reviewed Academic Journal of the Nepal Ophthalmic Society : NEPJOPH* 10.19 (2018): 23-31.

9. "Shapu - Seasonal Hyperacute Pan-Uveitis". EyeWiki, 14 Nov. 2023, eyewiki.aao.org/SHAPU_-_Seasonal_Hyperacute_Pan-Uveitis.

10. Kharel Sitaula Ranju., *et al*. "Youngest reported Seasonal Hyperacute Panuveitis case". *American Journal of Ophthalmology Case Report* 15(2019): 100523.

11. Sapkota U H., *et al*. "Seasonal hyper acute panuveitis: an unfathomed menace causing blindness in Nepal". *New Microbes and New Infections* 48 (2022): 101011.

12. Tamang Sandip., *et al*. "Seasonal Hyperacute Panuveitis (SHAPU) in Bhutan". *Ocular Immunology and Inflammation* 32,2 (2024): 203-209.

13. Manandhar Anu. "Patterns of Uveitis and Scleritis in Nepal: A Tertiary Referral Center Study". *Ocular Immunology and Inflammation* 25.1 (2017): S54-S62.

14. Byanju R N., *et al*. "Visual outcome of vitrectomy in seasonal hyperacute pan uveitis". *Kathmandu University Medical Journal (KUMJ)* 1.2 (2003): 121-123.

15. Manandhar A., *et al*. "Seasonal hyper acute pan uveitis--recent scenario in Nepal". *Nepal Medical College Journal : NMCJ* 10.3 (2008): 196-8.

16. Gurung Nanda. "Seasonal Hyperacute Panuveitis (SHAPU)". *Journal of Nepalgunj Medical College* 19 (2021):1.