CASE REPORT

FIRST POSNER SCHLOSSMAN SYNDROME POST COVID-19 INFECTION

Kristian Goenawan[1], Margrette Paliyama[1]
[1]Department of Ophthalmology, Medical Faculty, Universitas Kristen Krida Wacana, Indonesia
Email: tianmatagama@gmail.com

ABSTRACT

Introduction: *We reported a unique case report of Posner Schlossman Syndrome (PSS) after Covid-19 infection.*

Case Illustration: *Female 54 y.o. came in our hospital with chief complaint of painless blurred vision, red eye, and very high pressure on right eye (RE). She had the same complaint 1½ months before and diagnosed as acute primary angle closure glaucoma (PACG), treated successfully with good outcome. She also had history of covid-19 infection 1 month before the first attack. Initial visual acuity (VA) of RE is 20/70. Anterior segment showed mild inflammation with flare and cell but no KP, while posterior segment cannot be assessed. IOP was 57.0 mmHg. After 1 month of medication (patient rejected to go inward), the patient finally agreed to the trabeculectomy because VA decreased to 20/200. Perimetry and OCT has been done before the operation, showed decreased parameter. One day, 7-days, and 28-days post operated VA were 3/60, 20/50, and 20/40 respectively, while IOP were 9.0 mmHg, 6.7 mmHg, and 15.0 mmHg respectively.*

Discussion: *PSS can be very similar to acute PACG, though with careful history taking and examination we can distinct the disease. History taking for recurrent attack and unilateral is very important. Examination that showed acute open angle marked IOP with sign of uveitis should lead to PSS.*
Conclusion: *In every attack of glaucoma, PSS has resemblance with acute PACG. The foresight of an ophthalmologist in determining the diagnosis is indeed very important.*

Keywords: *Posner Schlossman Syndrome, PSS, covid-19, misdiagnosed, PACG acute*

INTRODUCTION

Posner Schlossman Syndrome (PSS) or glaucomatocyclitic crisis (as another name) is an acute and recurrent condition of unilateral attack marked by anterior uveitis and raised intraocular pressure (IOP)[1]. The sign of this syndrome is painless eye, deep anterior chamber, raised IOP (usual ~ 40-60 mmHg), and recurrent in 1 specific eye. The eyes appear normal between attacks. However, if attack happened and left untreated, the development of glaucomatous damage from PSS has also been noted[2]. Even though the IOP rising is fantastic, usually the corneal edema is not really obvious, therefore the visual acuity is not severely reduced. This condition is often mistaken with recurrent attacks of acute PACG. Usual sign of acute PACG that can differentiate are noticeable corneal edema (thus has remarkable decreased of visual acuity), convex lens, mid-dilatation pupil, shallow anterior chamber, and very painful

eye.

CASE ILUSTRATION

Female 54 years old came in our hospital with chief complaint of painless blurred vision and red eye on right eye (RE) (**Figure 1**). First same symptom appeared in 1 ½ months, diagnosed as acute primary angle closure glaucoma (PACG), and treated successfully with good outcome. There were no symptoms between first and second incident. She also had history of covid-19 infection 1 month before the first attack, and declared cured by the time first attack occurred.

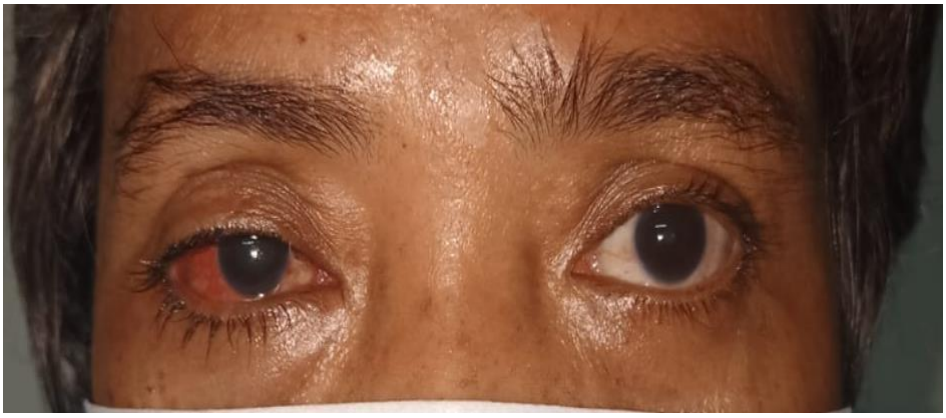

Figure 1. Initial condition of the patient

Physical examination showed visual acuity (VA) of RE is 20/70. Anterior segment showed mild edema cornea, keratic precipitate (-), flare-cell (+), deep chamber, sluggish reaction of pupil at 5mm diameter, and lens a bit cloudy (**Figure 2**). Posterior segment cannot be assessed. IOP of RE was 57.0 mmHg. We suggested patient inward but rejected by patient, therefore we give acetazolamide, timolol, and tobroson®.

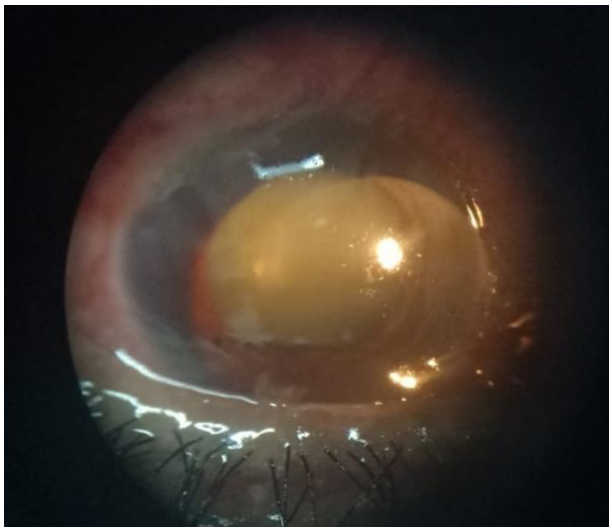

Figure 2. Slit lamp examination of RE. Mild corneal edema, no KP, flare and cell, sluggish pupil and cloudy lens

One week later, the patient controlled to our hospital. It was painless right eye, with VA 20/70, anterior inflammation, and IOP 52.0 mmHg. Ten days later patient showed up, VA 20/80, anterior inflammation, and IOP cannot be measured with tonometer non-contact. At every follow up, the patient always refuses to be inpatient. Two weeks later (1 month from first symptom), VA became 20/200, anterior inflammation, and IOP cannot be measured with tonometer non-contact. At this moment the patient agreed to do inpatient. We gave mannitol and do trabeculectomy.

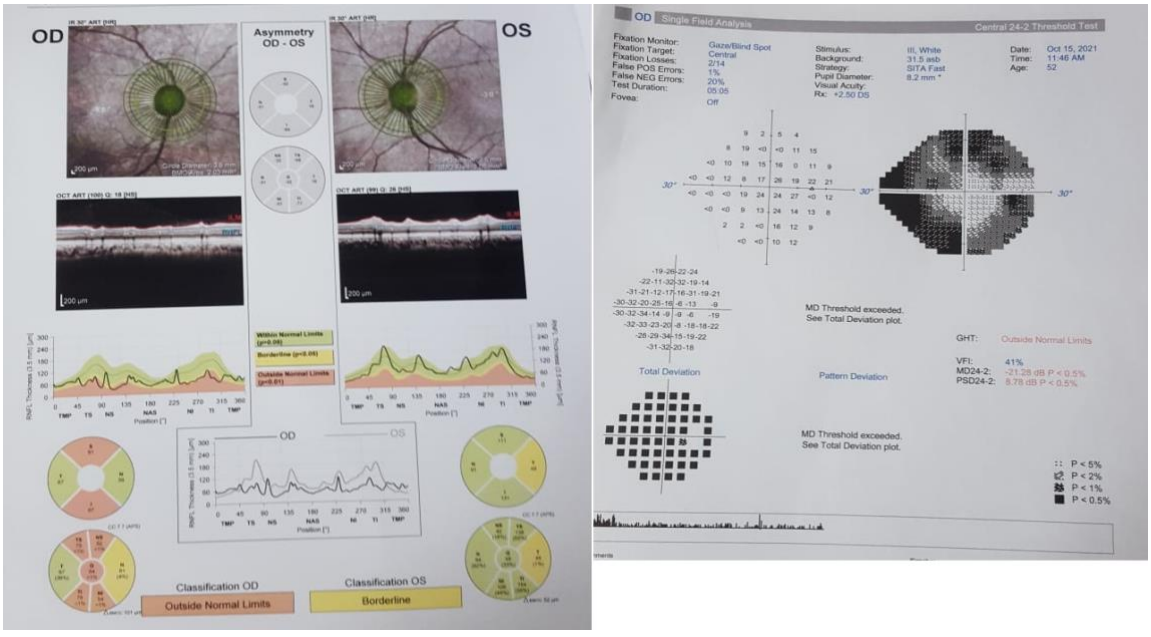

Figure 3. Perimetry and OCT has been done before trabeculectomy, showed decreased parameter.

VA of 1-day and 7-days were 3/60 and 20/50 respectively, while IOP were 9.0 mmHg and 6.7 mmHg respectively. As it was getting better, and the inflammation has mark decreased on 7-days post-operative, we consider the acute phase is already over and the patient went outward. Follow-up after 28 days post-op showed VA 20/40, no inflammation in anterior chamber, and IOP 15.0 mmHg.

DISCUSSION

Retrospective review study in China showed that the most frequently sign and symptoms is as follows: (1) unilateral transient episode of elevated IOP with blurred vision; (2) mild anterior chamber inflammation and/or a few small-to medium, discrete, round, white KP accumulating in the lower half of the cornea, no iris posterior synechia; (3) deep anterior chamber with wide and open angle and (4) recurrent attack with varied frequency[3]. PSS can be very similar to acute PACG, though with careful history taking and examination we can distinct the disease. History taking for recurrent attack and unilateral should lead to PSS instead of acute PACG. Physical examination that showed deep chamber should bring round the PSS.

The etiology of PSS is unclear, although small isolated cases studies theory showed infection of cytomegalovirus (CMV)[4-9] is the most probable causes. As in our patient we suggested that the patient get PSS from covid-19 infection. Several case report showed Covid-19 or its vaccination can cause uveitis[10-14], however no PSS has been reported. To the knowledge of author, this might be the first case report of PSS caused by Covid-19. However, the drawbacks of this case report are the lack of aqueos humor examination (for example PCR) to search for the etiology.

Medication for patients with PSS should target for controlled inflammation and IOP. It can be addressed with topical steroid and topical antiglaucoma therapies respectively[2]. There is some evidence that eliminating CMV using valganciclovir showed a better control for the disease[15]. Regardless, it is small sample and might be working only for CMV infection related to PSS.

If there is unimproved condition of raised IOP with medication when disease strike, surgery might be done. In our patient, we did trabeculectomy to manage the IOP. The goal is to control the IOP as low as possible to reduced the injury of optic nerve. Even though between attack there is no increased IOP, trabeculectomy might benefit the patient in long term, in case the attack arisen[16]. Our patient has 1 month “waiting” due to ignorance of the patient, and sadly the IOP cannot be controlled with medication only. Trabeculectomy was done, and the vision grown back (although not perfect).

CONCLUSION

In every attack of glaucoma, PSS has resemblance with acute PACG. The foresight of an ophthalmologist in determining the diagnosis is indeed very important.

CONFLICT OF INTEREST

All authors declare that they have no conflicts of interest.

References

1. Posner A, SCHLOSSMAN A. Syndrome of unilateral recurrent attacks of glaucoma with cyclitic symptoms. Archives of Ophthalmology. 1948;39(4):517-35.
2. Hung T, Chang JM. Treatment of glaucomatocyclitic crises. American journal of ophthalmology. 1974;77(2):169-72.
3. Jiang JH, Zhang SD, Dai ML, Yang JY, Xie YQ, Hu C, et al. Posner-Schlossman syndrome in Wenzhou, China: a retrospective review study. British Journal of Ophthalmology. 2017;101(12):1638-42.
4. Chee S-P, Bacsal K, Jap A, Se-Thoe S-Y, Cheng CL, Tan BH. Clinical features of cytomegalovirus anterior uveitis in immunocompetent patients. American journal of ophthalmology. 2008;145(5):834-40. e1.
5. Hedayatfar A, Chee S-P. Posner-Schlossman syndrome associated with cytomegalovirus infection: a case series from a non-endemic area. International ophthalmology. 2014;34(5):1123-9.
6. Kongyai N, Sirirungsi W, Pathanapitoon K, Tananuvat N, Kunavisarut P, Leechanachai P, et al. Viral causes of unexplained anterior uveitis in Thailand. Eye. 2012;26(4):529-34.
7. Li J, Ang M, Cheung CMG, Vania M, Chan ASY, Waduthantri S, et al. Aqueous cytokine changes associated with Posner-Schlossman syndrome with and without human cytomegalovirus. 2012.
8. Chee S-P, Jap A. Presumed fuchs heterochromic iridocyclitis and Posner-Schlossman syndrome: comparison of cytomegalovirus-positive and negative eyes. American journal of ophthalmology. 2008;146(6):883-9. e1.
9. Rodier-Bonifas C, Cornut P, Billaud G, Lina B, Burillon C, Denis P. Cytomegalovirus research using polymerase chain reaction in Posner-Schlossman syndrome. Journal Français d'Ophtalmologie. 2010;34(1):24-9.
10. ElSheikh RH, Haseeb A, Eleiwa TK, Elhusseiny AM. Acute uveitis following COVID-19 vaccination. Ocular immunology and inflammation. 2021;29(6):1207-9.
11. Bolletta E, Iannetta D, Mastrofilippo V, De Simone L, Gozzi F, Croci S, et al. Uveitis and other ocular complications following COVID-19 vaccination. Journal of clinical medicine. 2021;10(24):5960.
12. Pan L, Zhang Y, Cui Y, Wu X. Bilateral uveitis after inoculation with COVID-19 vaccine: A case report. International Journal of Infectious Diseases. 2021;113:116-8.
13. Bettach E, Zadok D, Weill Y, Brosh K, Hanhart J. Bilateral anterior uveitis as a part of a multisystem inflammatory syndrome secondary to COVID-19 infection. Journal of medical virology. 2021;93(1):139.
14. Sanjay S, Mutalik D, Gowda S, Mahendradas P, Kawali A, Shetty R. Post coronavirus disease (COVID-19) reactivation of a quiescent unilateral anterior uveitis. SN Comprehensive Clinical Medicine. 2021;3(9):1843-7.

15. Sobolewska B, Deuter C, Doycheva D, Zierhut M. Long-term oral therapy with valganciclovir in patients with Posner-Schlossman syndrome. Graefe's Archive for Clinical and Experimental Ophthalmology. 2014;252(1):117-24.
16. Dinakaran S, Kayarkar V. Trabeculectomy in the Management of PosnerSchlossman Syndrome. Slack Incorporated Thorofare, NJ; 2002. p. 321-2.