

PRESERVING VISION AND PREVENTING COMPLICATIONS: A CASE REPORT ON THE DIAGNOSIS AND MANAGEMENT OF CHRONIC ANGLE CLOSURE GLAUCOMA**Desi Ayu Wulandari¹, Oktarina Nila Juwita^{2*}**¹Faculty of Medicine, Tarumanagara University, Jakarta²Ophthalmologist, RSUD RAA Soewondo Pati, Central JavaEmail Korespondensi: oktarinanila17@gmail.com

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Doi: <https://doi.org/10.33024/mnj.v6i1.12812>**ABSTRACT**

This case report presents the clinical presentation and management of a 68-year-old male with chronic angle closure glaucoma. Upon examination, the right eye (OD) exhibited a significant decline in visual acuity to 1/300. Findings included conjunctival congestion (CVI +) and absence of posterior conjunctival vessel congestion (PCVI -), corneal opacification and edema, shallow anterior chamber, midriasis of the pupil, and absence of direct and consensual light reflexes (-). Additionally, lens opacification and chemosis (+) were observed. Conversely, the left eye (OS) had a visual acuity of 6/30 with an intraocular pressure (IOP) of 6/15. Similar to the right eye, it displayed corneal opacification and edema, a shallow anterior chamber, midriasis of the pupil, absence of light reflexes (direct and consensual), lens opacification, and chemosis (+). This case underscores the importance of early diagnosis of chronic angle closure glaucoma to prevent adverse prognostic outcomes.

Keywords: Chronic Angle Closure Glaucoma, Vision, Preventing Adverse Outcomes

INTRODUCTION

Chronic angle-closure glaucoma presents gradually, with persistent ocular pain, headaches, eye redness, a mid-dilated nonreactive pupil, and blurred vision, often accompanied by halos around lights. The condition primarily results from a gradual blockage of the trabecular meshwork by the iris, hindering the drainage of aqueous humor and leading to a progressive increase in intraocular pressure (IOP). Elevated IOP causes a pressure gradient in the posterior eye chamber, which induces anterior bowing of the iris and angle constriction, partially or completely obstructing the trabecular

meshwork. Peripheral laser iridotomy provides an alternative route for communication between the anterior and posterior eye chambers, alleviating the posterior pressure gradient and restoring the iris to its normal position. (Jonas et al., 2017; Peterson et al., 2017)

Previous research has highlighted that individuals at higher risk of angle-closure glaucoma are typically older and of Asian heritage, which predisposes them to increased lens thickness and a narrow anterior chamber. Timely and precise diagnosis is critical for managing both medical conditions. (Friedman et al., 2019) In this report, we

discuss a case involving a patient with chronic angle-closure glaucoma. Consideration should be given to the diagnosis of glaucoma as part of the workup. Early diagnosis and appropriate treatment are of utmost importance for a positive outcome.

CASE REPORT

A 68-year-old male patient presented at the outpatient ophthalmology clinic of RSUD RAA Soewondo Pati with complaints of difficulty in seeing with his right eye, while his left eye experienced blurriness. The complaint in the right eye had been ongoing for the past 2 years and was characterized by persistent aching discomfort, sudden loss of vision in the right eye, the presence of dark shadows in the right eye's field of vision, along with

redness and continuous tearing. Initially, the patient complained of blurry vision that progressively worsened over time. There were no reports of nausea, vomiting, fever, or headaches. The patient also mentioned that the vision in the left eye had been blurry for the past 2 years. This complaint was accompanied by redness in the left eye, with no history of watery eyes, absence of pain, and no discharge. The patient had sought prior medical treatment for similar complaints and had been prescribed eye drops, but the complaints did not improve. The patient could not recall the name of the medication provided by the doctor. Currently, the patient experiences redness in the right eye and difficulty in seeing, as well as blurred vision in the left eye (Image 1), significantly interfering with the patient's daily activities



Figure 1. Redness and Chemosis of the patient's eyes

In the ophthalmological examination, the findings revealed a significant reduction in visual acuity in the right eye (OD) to 1/300. Conjunctival congestion was noted with CVI (+) and absence of posterior conjunctival vessel congestion (PCVI -). The cornea displayed opacification and edema, the anterior chamber was shallow, the pupil was dilated, and direct and consensual light reflexes were

absent (-). Additionally, lens opacification and chemosis were observed (+). However, other parameters remained within normal limits. As for the left eye (OS), visual acuity was recorded as 6/30, with an intraocular pressure (PH) of 6/15. Similar to the right eye, the cornea exhibited opacification and edema, a shallow anterior chamber, pupil dilation, absence of direct and consensual light reflexes (-), lens

opacification, and chemosis (+). Other parameters were also within normal ranges.

Supportive assessments using NCT (non-contact tonometry) revealed intraocular pressure in the right eye (OD) at 60 mmHg and in the left eye (OS) at 43 mmHg. The

patient was administered treatment with Glycerin, Acetazolamide, KSR, and Timolol. Furthermore, the patient received education regarding the next steps, including peripheral laser iridotomy or trabeculectomy.

DISCUSSION

This case of bilateral chronic angle closure glaucoma, which was characterized by a significant decline in the visual acuity of both eyes and had been ongoing for the past 2 years. Glaucoma is a progressive optic neuropathy that is linked to elevated intraocular pressures. It results in visual field loss and, in its advanced stages, can culminate in complete blindness. Anatomically, glaucoma is categorized into open-angle glaucoma and closed-angle glaucoma. Closed-angle glaucoma pertains to a structural configuration in which there is a mechanical obstruction of the trabecular meshwork by the peripheral iris. Etiologically, it can be categorized as primary or secondary angle closure. Primary angle-closure occurs without any association with other ocular conditions, whereas secondary angle closure is linked to one or more other ocular conditions. (Friedman et al., 2019; Quek et al., 2011)

From a clinical perspective, angle-closure glaucoma can be categorized as acute or chronic. Chronic angle-closure can manifest with or without noticeable symptoms, making it akin to "silent" closed-angle glaucoma. This condition primarily involves the contact between the iris and the trabecular meshwork, which can result in the formation of synechiae and gradual angle closure. (Dias et al., 2017; Fea et al., 2018) Due to

this gradual nature, it is sometimes referred to as "creeping" angle closure. Angle-closure glaucoma disrupts the outflow of aqueous humor by obstructing, damaging, or degenerating the trabecular meshwork, leading to an increase in intraocular pressure and subsequent optic nerve damage associated with glaucoma. A defining characteristic of angle-closure glaucoma is the presence of irido-trabecular contact, which can lead to the chronic closure of the angle through the formation of peripheral anterior synechiae. When glaucomatous optic neuropathy is also present, this condition is termed chronic angle-closure glaucoma. (European Glaucoma Society, 2017; Izquierdo Villavicencio et al., 2019)

The current treatment regimen includes the administration of acetazolamide, timolol, KSR, and glycerin, with the primary goal of initially reducing intraocular pressure in the patient. This approach allows for the planning of subsequent therapies to prevent undesired complications. In cases where medical management does not effectively control intraocular pressure, surgical intervention may become necessary. It is important to note that in such cases, there may be an increased risk of developing aqueous misdirection. Therefore, precautions must be taken into account when considering surgical procedures. (Azulara-Blanco et al., 2016; Preda et al., 2020)

CONCLUSION

This intricate case of chronic angle closure glaucoma underscores the significance of maintaining a comprehensive list of potential diagnoses and eliminating secondary pathologies. Furthermore, this case report underscores the intricacies involved in the management of chronic angle closure glaucoma and the necessity for precise intervention to promptly lower intraocular pressure and plan therapies aimed at preventing unwanted complications.

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