Time is Vision: A Case Report of Acute Angle Closure Glaucoma in Emergency Department

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Introduction
Acute visual loss represents a myriad of differential diagnoses when presented to Emergency Department (ED). Acute angle-closure glaucoma (AACG) is one of the ophthalmological emergencies and has the highest prevalence in Asia.

Case Description
A 41-year-old Malay lady presented to ED with left-sided loss of vision, left eye pain and left-sided throbbing headache and vomiting four hours prior. She has underlying systemic lupus erythematosus (SLE) complicated with lupus nephritis, end stage renal failure (ESRF) and antiphospholipid syndrome (APLS). Her dialysis was 2 days prior and uneventful. She did not have any recent change in medication. On examination, she was slightly hypertensive, tachycardic, afebrile with pain score of 8/10 over left eye. The left eye was injected with periorbital swelling and redness. Visual acuity of right eye was 6/38, while left eye only detects hand movement. Left eye pupil was mid dilated with hazy cornea and a positive relative afferent pupillary defect (RAPD). She was urgently reviewed by ophthalmology team and assessment revealed IOPs of 12mmHg and 68mmHg in the right and left eye, respectively. She was diagnosed with AACG of left eye and was prescribed analgesic, intravenous acetazolamide and timolol eyedrop.

Discussion
AACG can lead to blindness if left untreated. Obstruction of aqueous humour drainage due to closure of anterior chamber causes raised intraocular pressure (IOP) and optic nerve damage. An IOP of more than 20mmHg is considered glaucoma or glaucoma suspect. It is an uncommon presentation in the ED but can be diagnosed easily with tonometry. The characteristic finding of painful red eye with mid-dilated pupils are critical signs that should raise the suspicion of AACG. Our patient also had multiple underlying illness that may cause painful red eye that other diagnoses such as ocular inflammatory conditions and systemic thrombosis should be considered, especially in bilateral visual loss.

Conclusion
A timely diagnosis of AACG should be made to preserve patient's vision. By having a high index of suspicion from initial examination, urgent ophthalmology consult should be made and pharmacological treatment can be started immediately to reduce the IOP. Handheld tonometry can be considered in the ED to assist in diagnosis.

Keywords: Glaucoma, acute visual loss, ophthalmological emergency

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