Short communication

Angle closure secondary to the use of lorazepam in patient with myopia magna

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ABSTRACT

Case report: Myopic magna with narrow anterior chamber that presented with a secondary angle closure due to lorazepam.

Discussion: Angle closure usually occurs in predisposed patients and is triggered by precipitating factors. Many drugs routinely used in clinical practice could act as a factor responsible for the secondary angle closure.

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Cierre angular secundario al uso de lorazepam en paciente con miopía magna

RESUMEN

Caso clínico: Miope magna con cámara anterior estrecha que presentó cierre angular secundario a lorazepam.

Discusión: El cierre angular generalmente ocurre en pacientes predispendos desencadenado por factores precipitantes. Muchos fármacos de uso rutinario en la práctica clínica podrían ejercer como factor responsable del cierre angular secundario.

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Introduction

Acute glaucoma attacks (AGA) can be brought about by routinely used drugs, including adrenergic agonists, anticholinergics, sulfa group drugs and tricyclic antidepressants, among others.1,2

The risk is higher in predisposed subjects such as hypermetrope or phakic individuals, as well as those with narrow anterior chambers.3

The case presented herein relates to angle closure in a patient with side effects due to lorazepam. As a result of the anticholinergic effect, lorazepam produces pupil dilatation.

Fig. 1 – Biomicroscopy of both eyes, showing narrow anterior chamber.

Fig. 2 – Right and left eye ocular fundus.

Fig. 3 – Campimetry of both eyes.
Fig. 4 – Optic coherence tomograph of both eyes. Retina nerve fiber layer.

Fig. 5 – Anterior chamber optic coherence tomograph of both eyes.
Fig. 6 – Topometric representations of both eyes (topographs).
that can give rise to angle closure which in turn increases intraocular pressure.\(^1\)

The present case is exceptional because the patient exhibited myopia magna and therefore was not included in the risk population with predisposing factors, as these in general exhibit broad anterior chambers.

**Case report**

Female patient, 21, with myopia magna history, who visited the ophthalmological emergency department due to pain and diminished vision in left eye (LE) with several days evolution. The patient had initiated treatment with lorazepam (Orfïda\(^\text{®}\) 1 mg every 12 h) prescribed by the general practitioner due to antidepressant syndrome 1 week before onset of symptoms.

Ophthalmological examination revealed a visual acuity (VA) of 0.6 in the right eye (RE) and 0.2 in the LE, intraocular pressure (IOP) of 16 mmHg in the RE and 42 mmHg in the LE. Biomicroscopy (BMC) revealed a narrow anterior chamber (AC) in both eyes (BE), evidencing corneal edema and one-cross Tyndall in the LE. Gonioscopy confirmed narrow AC in the RE (grade B20b2+ in supero-nasal quadrant and grade C30b2+ in infero-temporal quadrant according to the Spaeth classification) as well as angle closure in the LE (grade A20b in all four quadrants according to Spaeth), discarding plateau iris. Ocular fundus (OF) showed diffuse myopic retinchoroidosis without atrophy plates in RE, and of difficult assessment in the LE due to said corneal edema.

Treatment was initiated with acetazolamide (Edemox\(^\text{®}\), Chiesi, Spain), dexamethasone eye drops (Maxidex\(^\text{®}\), Alcon, Spain), timolol (Timofo\(\text{®}\), Frosst, Spain) and iridotomy was performed in BE. Five hours after beginning treatment, IOP in the LE diminished to 30 mmHg and clinical symptoms disappeared.

The following day, a checkup produced IOP values under control (16 mmHg in BE). BMC showed corneal transparency (Fig. 1) with permeable iridotomies, and the OF showed slightly oblique and pale disk, with diffuse myopic retinchoroidosis (Fig. 2). The visual field (Octopus 1-2-3\(^\text{®}\), Oculusinc, Wetzlar, Germany) showed peripheral camipematic defects with increased blind spot in LE (Fig. 3).

Optic coherence tomograph (OCT) (Heidelberg, Engineering, Inc., Heidelberg, Germany) revealed alterations in the nerve fiber layers in BE (Fig. 4) probably related to the patient’s myopia magna. Refraction showed myopia of −11 diopters in the RE and −21 diopters in the LE. Anterior pole OCT (Cirrus\(^\text{®}\) HD-OCT, Cari Zeiss Meditec, Inc., Dublin, California, USA) showed narrow anterior chamber in BE (Fig. 5). AC depth was 1.98 mm in RE and 1.36 mm in LE, according to data obtained with Oculus-Pentacam\(^\text{®}\) (Oculus, Wetzlar, Germany) (Fig. 6).

**Discussion**

Lorazepam has been described as a cause of angle closure because, as with benzodiazepine, its anticholinergic action produces pupil dilatation which, in patients with predisposing factors, can produce iridocorneal angle closure due to the pupil blockage mechanism, interrupting aqueous humor drainage and increasing IOP thus causing an acute glaucoma attack.\(^2\) An additional angle closure mechanism is the drug-induced supraciliary choroidal effusion syndrome which rarely occurs and can be produced by sulfa derivatives (topiramate, acetazolamide, hydrochlorothiazide, sulfamethoxazole, triamterene and selective serotonin recapture inhibitors such as paroxetine).\(^3\)\(^4\)

In the present case, despite biometrics with answer-posterior length matching the myopia magna of the patient (RE: 25.6 mm; LE: 26.3 mm), angle closure could have occurred due to probable anterior implantation of the ciliary body which facilitated iridocorneal angle closure after the anticholinergic stimuli of lorazepam treatment.

Before beginning treatment with drugs having this potential side effect, patients should be informed of possible ocular risks and those with predisposing factors\(^5\) should undergo an ophthalmological examination. In addition, the specialist prescribing the medication should warn the patient about possible visual alterations and to visit the ophthalmological department as soon as any alteration occurs.\(^6\) The ophthalmologist should not only treat the glaucoma crisis but also find out its causes. Only in this way it will be possible to establish the most appropriate strategy for managing every patient.\(^7\)

As conclusion, even though the present case is infrequent, angle closure can occur in patients who initiated treatment with lorazepam despite having myopia magna, above all in the presence of other predisposing factors and an ocular structure with a relatively narrow AC, as in the present case.

**Conflict of interests**

No conflict of interests was declared by the authors.

**References**


