CASE REPORT

Acute bilateral glaucoma and panuveitis as a side effect of topiramate for weight loss treatment

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SUMMARY

A 54-year-old male patient presented to our clinic with acute angle-closure glaucoma and panuveitis in both eyes after being treated with topiramate for binge eating and obesity. This case report emphasises the hazardous side effects of treatment with topiramate with unusual indication and the precaution a caretaker must take when treating a patient.

BACKGROUND

Topiramate is an anticonvulsive agent that is used for treatment of several types of seizures, or as a sole medicine for migraines.

Few articles have provided evidence that topiramate can be useful for treatment in cases of bulimia and binge-eating disorder with obesity.

Caretakers must be aware of one of the important possible ophthalmic side effects of topiramate and the way of treating these undesired situations.

CASE PRESENTATION

A 54-year-old man was referred to our emergency department with 1 day blurred vision and redness in both eyes accompanied by disturbing headaches. The patient underwent a full neurological assessment including a CT of the brain and orbits, which was unremarkable.

Anamnesis revealed that the patient was instructed to take topiramate 50 mg orally/day, 1 week before presentation, by his personal physician in an attempt to make him lose weight. On admission, best-corrected visual acuity (BCVA) was 6/30 in right and left eye. Intraocular pressures (IOPs), as measured by the Goldmann tonometer, were 70 mm Hg in his right eye and 64 mm Hg in his left eye. Slit-lamp examination revealed ciliary and conjunctival injection, moderate to severe corneal oedema and fixed mid-dilated pupils in both eyes. Examination of anterior chambers in both eyes revealed shallow chambers without an iridocorneal touch. Flare++ was seen in both anterior chambers. Gonioscopy showed appositional angles in both eyes.

INVESTIGATIONS

In an ultrasound biomicroscopy closed angle, a shallow anterior chamber and a swollen forward diverted lens (figure 1) were observed in both eyes. Since only a limited view of the posterior pole was available in both eyes, a B-scan ultrasound was performed in both eyes and it revealed moderate serous choroidal effusions, with an extension to the posterior poles in both eyes (figures 2 and 3). The patient was diagnosed as suffering from angle-

Figure 1 Ultrasound biomicroscopy of the left eye showing a forward displacement of the iris-lens diaphragm with closure of the anterior chamber angle.

closure glaucoma and panuveitis as a side effect of topiramate use for weight loss treatment.

TREATMENT

First, topiramate administration was stopped, and the patient was started with topical α -blockers, β -blockers, homatropine 2%, prednisolone acetate 1% and carbonic anhydrase inhibitors (500 mg acetazolamide orally). Intravenous 20% mannitol, 100 g in 500 mL, was given and intravenous piggy-back (IVPB) 500 mg acetazolamide was administered. Two hours after that treatment, IOPs were 51 mm Hg and 53 mm Hg in the right and left eyes, respectively. Owing to the consistent elevation of IOPs and the status of choroidal effusions, the patient was given methylprednisolone, 250 mg IVPB. The IOP value was 30 mm Hg in the right eye, and in the left eye it was 37 mm Hg, as measured by the Goldmann tonometer.

Figure 2 B scan ultrasound of the left eye showing serous choroidal effusions.

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Figure 3 B scan ultrasound of the right eye showing extended choroidal effusions to the posterior pole.

OUTCOME AND FOLLOW-UP

After 1 week, the patient's BCVA was 6/12 and 6/18 in the right and left eyes, respectively, with a -4.00 D sphere in both eyes. IOPs were measured again and were found to be 12 mm Hg and 16 mm Hg in the right and left eyes, respectively. The anterior chambers were deeper in both eyes. Examination in gonioscopy showed open angles in both eyes. Choroidal effusions were decreased on fundusoscopic examination and in ultrasound B mode. Resolution of the choroidal effusions occurred eventually after 14–20 days. Myopic shift decreased. The methylprednisolone, 250 mg IVPB treatment was stopped and the topical treatment was reduced gradually. A month later, the follow-up showed that the patient's visual acuity had returned to 6/6 in the right and left eyes. The IOPs with no medication needed were 10 mm Hg in the right eye and 11 mm Hg in the left eye. Further, an anterior chamber examination revealed localised posterior synechiae in the left eye but was otherwise normal in both eyes. In a dilated fundus examination, the cup-to-disk ratio was 0.4 in both eyes, the retinas were attached and no choroidal effusion was detected. The visual fields were normal in both eyes (tested by the Humphrey computerized Field Analyzer).

DISCUSSION

Topiramate is an anticonvulsive drug in widespread use. The indications for it, as published by the Food and Drug Administration (FDA), are partial onset seizures, primary generalised tonic-clonic seizures, seizures associated with the Lennox-Gastaut syndrome and migraines.¹ Topiramate is indicated for adults and children 2 years of age and older. Thus, many physicians, of a wide variety of specialties, are prescribing it for their patients. Furthermore, clinical studies have shown significant advantages of topiramate in treating binge-eating disorders, obesity and bulimia.^{2–4} Though not an indication yet, it is likely that with more evidence accumulating, topiramate will become a regularly used drug for this indication, with more caretakers prescribing it.

One of the many warnings while using topiramate is the risk of secondary angle-closure glaucoma. The risk of such a complication is rare; however, it might, if left untreated, cause loss of vision as a result of increased IOP.

The mechanism for secondary close-angle glaucoma is cilio-choroidal effusion, anterior rotation of the ciliary body and forward displacement of the iris-lens diaphragm with closure of the anterior chamber angle.⁵ This response is idiosyncratic.

Although topiramate and other sulfonamide derivatives induce secondary angle-closure glaucoma and uveitis⁶ is a rare side effect, many case reports have established the phenomena.^{7–9} In some cases, the withdrawal of topiramate and sulfonamides, while administering topical prednisolone 1% drops, changed the course of the disease. In cases where treatment did not accomplish the result intended, oral prednisolone was given. Overall, such treatment is usually very successful in achieving complete healing when administered in time.

In our case, other than bilateral secondary close-angle glaucoma, our patient also presented with panuveitis; thus, treatment had to be aggressive and include all of the above, starting with methylprednisone, antiglaucoma therapy and cycloplegia.

With the increasing use and more indications for topiramate, physicians should be aware of the many hazardous side effects of this drug. Thus, an ophthalmologist must be consulted as soon as possible in any case of suspicion of acute angle-closure glaucoma in these patients.

Learning points

- ▶ Topiramate is in wide use for several indications, and more indications will probably be added when more evidence will accumulate. Nevertheless, it has many side effects that the health provider must be aware of.
- ▶ The first line of treatment for secondary closed-angle glaucoma and panuveitis should be a total withdrawal of topiramate and topical eyedrops.
- ▶ Further treatment for close-angle glaucoma and other side effects of topiramate must be decisive, aggressive and with several medications.
- ▶ Every delay in treatment can be harmful to the patient and result in loss of vision.
- ▶ An ophthalmologist must be consulted as soon as possible in any case of suspicion of acute angle-closure glaucoma or other ophthalmic side effects in these patients.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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