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Sir,

Intraoperative floppy iris syndrome associated with quetiapine

Intraoperative floppy iris syndrome (IFIS) consists of a triad of flaccid and billowing iris, iris prolapse through the surgical incisions, and progressive intraoperative pupil constriction. It is associated with the use of systemic α1-adrenoceptor (AR)-blocking agents, including tamsulosin, terazosin, doxazosin, and labetalol.[1]

We present a new case of typical IFIS occurring in a patient taking quetiapine, one of the most commonly used antipsychotic agent approved for the treatment of schizophrenia and bipolar disorder.

Case report

A 59-year-old woman with Alzheimer's disease presented with cataract in both eyes. The patient's history did not reveal any other systemic diseases, eye trauma, or previous ocular surgery. Preoperatively, the pupil dilated to 5.0 mm.

During the phacoemulsification procedure, characteristics of IFIS developed. Miosis and floppy iris responded moderately to intracameral adrenaline. Phacoemulsification was completed carefully and intraocular lens was successfully implanted into the capsular bag.

While reviewing the patient's medication, we noticed that she had been on memantine 10 mg/day for 3 years for dementia and quetiapine 100 mg/day for 1 year for dementia-associated psychosis.

Comment

The patient was using two different drugs: an *N*-methyl-D-aspartate (NMDA) postsynaptic receptor antagonist, memantine, and an antipsychotic, quetiapine. Memantine has been shown to block the effects of glutamate at NMDA receptors and has no action on αARs. Thus, the most likely agent for developing IFIS was quetiapine in this patient.

Antipshotic zuclopenthixol was reported to be associated with IFIS.[2] We were also previously faced with a similar problem with chlorpromazine, which is a typical antipsychotic agent.[3] Typical antipsychotics have been largely supplanted by the atypicals because of the latter's greater safety and tolerability.[4] These agents produce extensive blockade of serotonin $(5\text{-HT})_{2A}$ receptors, stimulation of 5-HT_{1A} receptors, and blockade in dopamine D_2 receptors. They also have an antagonistic effect on α1-ARs, which is especially prominent with quetiapine.[5] Its use was previously reported to be associated with incomplete IFIS.[5]

In conclusion, surgeons should keep in mind the possibility of IFIS in patients using antipsychotics with prominent α1 receptor-blocking activity. Careful history must be elicited to detect the current or past use of these commonly prescribed group of drugs.

Conflict of interest

The authors declare no conflict of interest.

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Sir,

Supraciliary space breast metastasis

The following case describes an unusual site of metastasis within the eye.

Case report

A 47-year-old female presented with photopsia in her right eye. She had a previous diagnosis of grade 2-invasive ductal carcinoma (not otherwise specified) of the right breast in 2007 with no evidence of metastasis. The carcinoma was positive for oestrogen and progesterone receptor and negative for HER2. Treatment included wide local excision, axillary node clearance, and adjuvant radiotherapy. Her visual acuity in both eyes was normal. We identified a peripheral non-rhegmatogenous superior retinal detachment in her right eye associated with a mass in the ciliary body area measuring 18 mm by 4 mm on ultrasonic bio-microscopy (Figure 1a).

An open flap biopsy of the right eye was performed. An amelanotic gelatinous mass was found, which was distinct and freely mobile from the overlying sclera and underlying pigmented ciliary body, confirming the supraciliary location of the lesion. Histology showed fragments of a carcinoma with glandular differentiation, strongly positive for pan-cytokeratin marker AE1 AE3, cytokeratin 7, focally positive for gross cystic disease fluid protein-15 (GCDFP15) and almost every nucleus positive for oestrogen receptor (Figures 1b–d). The tumour was HER2 negative (not shown). The features were those

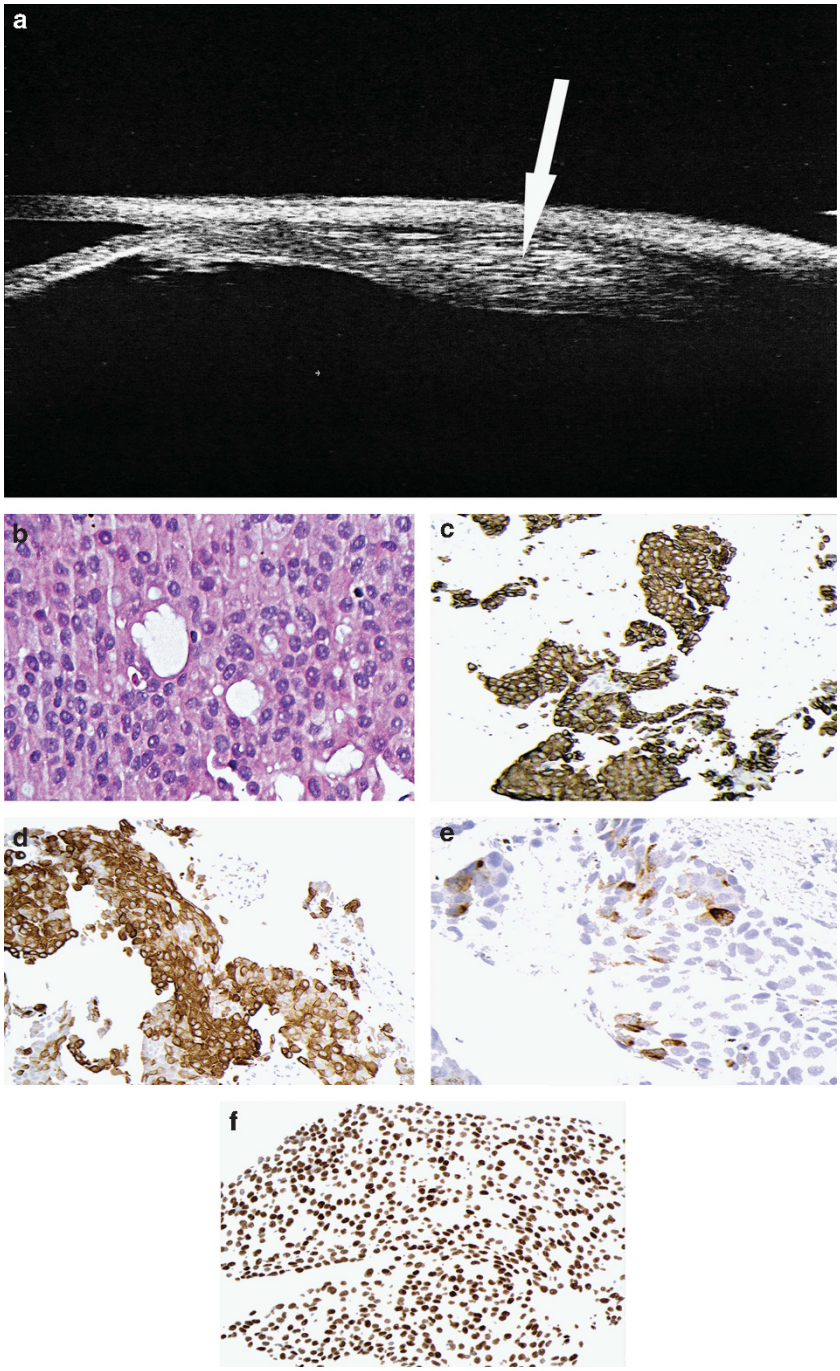

Figure 1 (a) Ultrasonic bio-microscopy examination showing the lenticular-shaped ciliary body mass (white arrow). (b) Haematoxylin and eosin-stained section showing the breast carcinoma metastasis morphology. The holes in the tissue represent glandular differentiation. (c) The breast metastasis shows immunohistochemical positivity for pan-cytokeratin marker AE1 AE3 (brown = positive). The unstained cellular tissue between the tumour deposits is a desmoplastic myofibroblastic response triggered by the tumours present in the supraciliary space. It is not the normal ciliary body muscle. (d) Immunohistochemical positivity for cytokeratin-7 (brown = positive). (e) Focal immunohistochemical positivity for GCDFP-15. (f) The tumour shows nuclear immunohistochemical positivity for oestrogen receptor (brown = positive).

of metastatic breast adenocarcinoma within the supraciliary space. Treatment was aimed at controlling the disease, with commencement of tamoxifen. The patient has subsequently developed disseminated metastases.

Comment

To the best of our knowledge, this is the first demonstration of a malignant tumour metastasizing to the supraciliary space. Tumours previously described within the

supraciliary space include benign primary mesectodermal leiomyomas[1] and one case of direct local spread of a conjunctival mucoepidermoid carcinoma to the supraciliary space.[2] Why the supraciliary space was the site of metastasis in this case remains speculative. The distribution of breast metastases to the eye includes the choroid (81%), iris (9%), ciliary body (2%), optic disc (5%), and retina (rare).[3] Symptoms are dependent on the site affected, with blurring of vision being common to all. However, patients are often asymptomatic.[4] To conclude, we must add the supraciliary space to the list of potential sites of metastases to the eye and also be aware that lesions within this space can present with non-rhegmatogenous retinal detachments.

Conflict of interest

The authors declare no conflict of interest.

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Sir,

An unusual presentation of aqueous misdirection

Aqueous misdirection following pars plana vitrectomy (PPV) is rare, with four cases described to date.[1–3] We report such a case following PPV for macular hole repair.

Case report

An 85-year-old female underwent uneventful PPV, internal-limiting membrane peel and gas tamponade (C_2F_6), combined with cataract surgery. Post-operative facedown posturing was not advised.

On day 1, axial shallowing of the anterior chamber (AC) and an intraocular pressure (IOP) of 66 mm Hg were noted. Mannitol and acetazolamide were administered along with maximum topical therapy. Gas was also released from a scleral port site, lowering the IOP to 5 mm Hg. Within 24 h, the IOP had crept up again to 80 mm Hg, which required further gas release and AC reformation. Laser peripheral iridotomies (PIs) were attempted but limited by corneal oedema. As IOP still remained refractory, further gas was removed (equalised to atmospheric pressure) and a surgical PI created. She also received 180° of cyclocryotherapy. These had little effect, with IOPs continuing to range between 55 and 65 mm Hg, and the presumptive diagnosis of aqueous misdirection was made. Anterior vitrectomy with zonulo-hyalo-iridectomy was performed.

The IOP remained low on no medications, but unfortunately the eye had become phthisical. Fellow eye gonioscopy revealed iridocorneal touch, so prophylactic cataract surgery was performed.

Comment

Aqueous misdirection is characterised by elevated IOP and central shallowing AC without pupillary block or choroidal abnormalities.[1] Cases refractory to medical and laser therapy undergo PPV. As PPV is a form of treatment, aqueous misdirection was not suspected early on, and instead we treated the more common complication of gas-related IOP rise.

Incomplete removal of the anterior hyaloid, which inhibits communication between the AC and vitreous cavity, would explain this paradox. A higher rate of recurrence of aqueous misdirection has been described in patients with PPV alone for the same reason, and nowadays PPV with zonulo-hyalo-iridectomy is recommended.[4]

Experiments performed by Epstein *et al*[5] suggested that at normal perfusion pressures the vitreous and anterior hyaloid offered very little resistance to forward flow of aqueous, but at higher pressures there was an increased resistance. Certain aspects of PPV, such as gas overfill or expansion, may simulate these increased perfusion pressures and result in aqueous entrapment.[5]

The patient developed a phthisical eye 3 months after the initial vitrectomy procedure. This is most likely related to the cyclocryotherapy, resulting in a non-functioning ciliary body and reduction of aqueous production. Outcomes of cyclocryotherapy are often unpredictable and are associated with a higher incidence of hypotony in comparison to cyclodiode.[6] Further, the prolonged high pre-treatment IOP may have caused ciliary body ischaemia, which in turn may lead to ciliary body shutdown following cyclocryotherapy. The reason for choosing cyclocryotherapy was that cyclodiode was not yet available at our unit.

Clinicians should consider the possibility of aqueous misdirection after vitrectomy. Some surgeons even advocate the routine disruption of the anterior hyaloid in cases at risk of aqueous misdirection.

Conflict of interest

The authors declare no conflict of interest.

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