A rare case of superior hypopyon with iris neovascularization

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A 70-year-old female presented to the eye outpatient department with the chief complaint of blurred vision, pain, and redness in the left eye for 2 days. Visual acuity in the right eye was 6/6 and hand movement close to face in the left eye. Slit lamp examination left eye revealed a superior hypopyon, +3 cells in the anterior chamber, and iris neovascularization [Figures 1 and 2]. Intraocular pressure by noncontact tonometer was 10 and 22 mm in the right and left eye, respectively. B-scan [Figure 3] and magnetic resonance imaging (MRI) brain and orbit [Figure 4] were ordered.

Questions

1. What is the likely diagnosis?
2. What is the differential diagnosis?
3. What could be the cause of raised intraocular pressure in the left eye?
4. What are findings on ultrasound and MRI?
5. What is the line of management and workup for the patient?

Figure 1: Superior mass, with neovascularization of the iris

Figure 2: Post anterior chamber tap photograph showing hemorrhage superiorly and diffuse hyphema after the tap

Figure 3: B scan of the right and left eye revealing a mass in the ciliary region

Figure 4: Magnetic resonance imaging brain and orbit

Figure 5: Gross specimen of the eyeball of the size 2.5 cm × 2.5 cm × 1.3 cm with a gray-white growth attached on the scleral surface, with no involvement of the posterior half of the eyeball and optic nerve

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Answers for Clinical Quiz

**Answers**

1. Based on the clinical appearance and echographic findings, the patient was diagnosed ciliary body melanoma, with metastasis to the iris.

2. Differential diagnosis are:
   - Posttraumatic fungal exudates
   - Metastasis
   - Lymphoma.

3. The mechanisms that can lead to glaucoma are the direct extension of the tumor into the trabecular meshwork, the seeding of tumor cells into outflow channels, pigment dispersion, inflammation, hemorrhage inducing hemolytic glaucoma, and melanomalytic glaucoma.

4. B-scan revealed a mass in the ciliary region of the left eye [Figure 3]. MRI brain with bilateral optic nerves was ordered which revealed altered signal intensity area in the ciliary body region, hyperintense on T2 and flair [Figure 4].

5. Prednisolone Acetate 1% (G. Predforte) 4 times a day, Atropine 1% (G. Atro) three times a day, Timolol 0.5% and Brimonidine 0.2% (G. Brimocom) twice a day was given. A complete metastatic workup for tumor staging-complete blood count, basic metabolic panel, liver function tests (LFTs), chest X-ray, and abdominal ultrasound was done which were negative for evidence of metastasis. As it was an advanced and complicated tumor with metastasis to the iris, compromising the visual function, an elective enucleation surgery was planned. Size of the eyeball on gross examination was 2.5 cm × 2.5 cm × 1.3 cm. Outer surface of the eyeball was gray-white with prominent vascular markings [Figure 5]. On cut section, posterior chamber showed a gray-brown growth attached on the scleral surface. Posterior half of the eyeball and optic nerve were not involved. Tumor in the choroid layer of the eyeball was seen on microscopic examination. Due to the clear margins and lack of evidence indicating distant metastasis, no further treatment was necessary and was counseled to undergo yearly eye exams with annual tumor surveillance, consisting of a physical examination, LFTs, and imaging of the liver with ultrasonography or MRI with contrast.

**Discussion**

Uveal melanoma is the most common primary intraocular malignancy in white adults. Melanoma of ciliary body is reported 1 of 10 cases of all intraocular melanomas. Only two reports have been documented in India and none presented with glaucoma. This is a case from the Indian subcontinent of the primary ciliary body and choroidal melanoma presenting with secondary glaucoma and uveitis.

The most frequent symptoms are represented by local signs as blurry vision due to astigmatism or lens dislocations, floaters, painless visual field loss, or pain as a result of acute glaucoma.

Patient with iris involvement most commonly presents with a unilateral metastatic nodule. The liberation of friable cells often leads to a secondary iritis, episcleral injection, and occasionally, pseudohypopyon.

The ciliary body and anterior choroidal melanomas have the worst prognosis of all intraocular melanomas because (a) hematogenous metastasis is faster in ciliary body melanoma (b) late diagnosis of the tumor due to the absence of clinical signs in the early stages and anatomical localization, making it harder to identify.

External beam therapy or brachytherapy can be used for medium-sized tumor (<15 mm in diameter). In advanced cases, depending on the size, local extension and cellular type of the melanoma, the treatment is surgical, with enucleation of the eye, block excision, or sclerouvectomy consisting in an in-block removal of ciliary body, cornea, iris, and sclera following by grafting to close the defect.

**Declaration of patient consent**

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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**Conflicts of interest**

There are no conflicts of interest.

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