COGAN-REESE SYNDROME: AN IRIS MELANOMA MASQUERADER

This case highlights the overlap in presentation and distinguishing signs to look for.

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Iris melanoma and Cogan-Reese syndrome (CRS), while pathologically distinct, share several clinical features that could lead to misdiagnosis. Each condition tends to present in middle-aged patients with structural changes to the iris, accompanied by obstruction of the iridocorneal angle and subsequent elevated IOP. Characteristics unique to CRS, a variant of iridocorneal endothelial (ICE) syndrome, include corneal endothelial "beaten metal" appearance, corneal edema, and broad peripheral anterior synechiae (PAS). Conversely, features particular to iris melanoma include a solid iris mass with additional iris stromal and angle seeding, as well as evidence of mass growth.[1]

The following case demonstrates the significant overlap in presentation between CRS and iris melanoma and outlines an approach to differentiate these diagnoses.

CASE REPORT

During a routine eye examination, a 60-year-old White man was discovered to have a thickened iris with an irregular pupil in his left eye, which is concerning for iris melanoma. The patient had an ocular history of glaucoma in his left eye that was controlled with topical medication. On examination, his BCVA was 20/30 OU with IOP of 12 mm Hg OD and 15 mm Hg OS. On slit-lamp and fundoscopic examination, the right eye was unremarkable. Dilated fundus examination of the left eye was also unremarkable.

The anterior segment of the left eye revealed a distorted pupillary margin dragged superotemporally with prominent ectropion irides, corectopia, and flattened iris appearance without crypts. The iris surface demonstrated multiple small, uniform nodules that were 300 µm in diameter (Figure 1). In the 2:30 meridian, there was an adhesion of the iris to the corneal endothelium with broad PAS. Close biomicroscopic inspection confirmed a corneal endothelium with a "beaten metal" appearance.

Imaging with ultrasound biomicroscopy and anterior segment OCT (AS-OCT) confirmed the presence of iris nodules and PAS (Figure 2). These features of regularly spaced iris nodules, broad PAS, and endothelial abnormalities were consistent with CRS masquerading as iris melanoma. Observation and continued treatment with IOP-lowering medications were recommended.

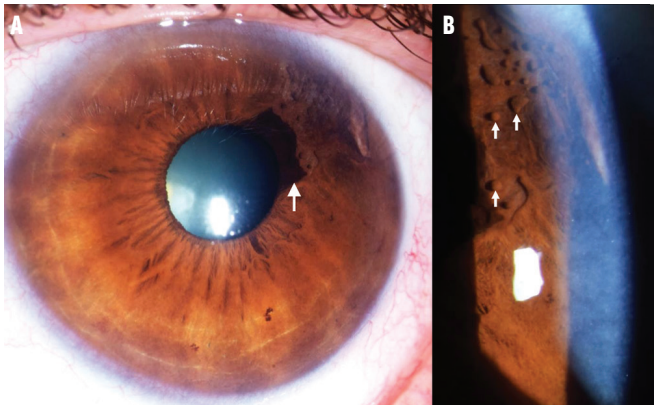

Figure 1. Slit-lamp photography showed ectropion uveae (A, white arrow) and multiple pedunculated nodules in the superotemporal quadrant of the left eye (B, white arrows).

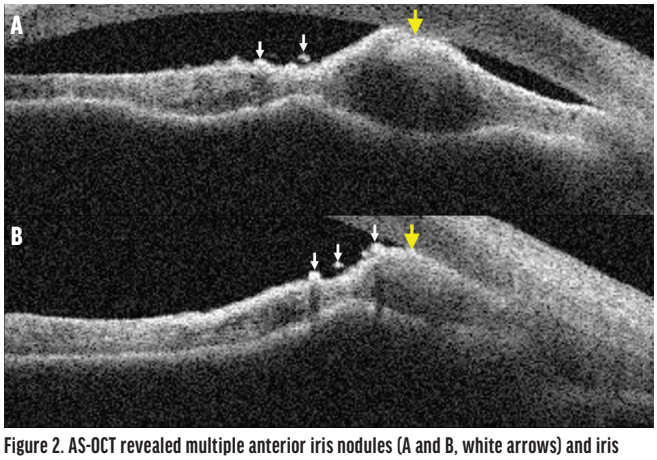

Figure 2. AS-OCT revealed multiple anterior iris nodules (A and B, white arrows) and iris adhesion to the corneal endothelium (yellow arrows) that was obstructing the iridocorneal angle outflow.

ABOUT CRS

ICE syndrome, an ophthalmic disorder characterized by abnormal corneal endothelial cells, is categorized into three variants: Chandler syndrome (CS), essential/progressive iris atrophy (EIA), and CRS.[2-4] In ICE syndrome, pathologic endothelial cells (perhaps triggered by Epstein-Barr virus or herpes simplex virus infection) proliferate and migrate onto the iridocorneal angle and the iris surface, subsequently manifesting features such as PAS, corectopia, ectropion uveae, and secondary angle-closure glaucoma.[5,6]

CRS is unique compared with CS and EIA in that patients present with fine, pigmented iris nodules between a smooth, matted anterior iris stroma lacking crypts.[3,7] The disrupted iris architecture seen in CRS is thought to result from the presence of epithelialization of the corneal endothelial cell layer, migrating onto the iris and causing it to flatten, with the nodules representing pinched-off portions of iris stroma.[7]

Although PAS is present in each of the three ICE variants, studies show that patients with CRS have more advanced glaucoma with higher IOP, worse glaucomatous optic atrophy, and greater visual field loss compared with that of CS and EIA.[8-10] However, one study examining Indian patients found that the frequency of glaucoma and surgical intervention is not significantly different between the ICE variants.[10] Corneal edema appears to be milder in CRS compared with CS.[8,10-12]

CRS typically affects adult women, as is typical of other ICE syndrome variants.[8] Studies across different ethnicities/races, however, suggest that CRS may be the most common variant in East Asian countries compared with North America.[8-10,12]

Helpful Imaging

Two recent case reports suggest that AS-OCT is useful in detecting iris alterations characteristic of CRS for a definitive diagnosis.[13,14] Serial AS-OCT may be useful in monitoring CRS progression by documenting increased iris folding and thickening, as well as nodule formation and PAS, as we found on AS-OCT in our patient.

Treatment Approaches

Antiglaucoma medications, including beta blockers, alpha agonists, and carbonic anhydrase inhibitors, are considered first-line therapies for elevated IOP secondary to PAS in patients with ICE syndrome.[15] However, data show that many patients with ICE do not respond to medical therapy and require repeat surgical interventions, such as trabeculectomy with adjunctive antifibrotic agents or aqueous shunt surgery, to control their IOP.[15-21] Patients with CRS, in particular, have been noted to require more frequent surgery compared with those with other ICE variants.[8,12]

Although corneal edema is less pronounced in CRS compared with CS, penetrating keratoplasty, Descemet stripping with endothelial keratoplasty, Descemet membrane endothelial keratoplasty, and deep lamellar endothelial keratoplasty have been successfully performed in patients with significantly diminished visual acuity due to ICE.[22-25]

PATIENTS WITH CRS, IN PARTICULAR, HAVE BEEN NOTED TO REQUIRE MORE FREQUENT SURGERY COMPARED WITH THOSE WITH OTHER ICE VARIENTS.

SIGNS OF IRIS MELANOMA

Suspicion for melanoma may increase when the iris nodule features are accompanied by corectopia and elevated IOP. Shields et al reviewed 71 consecutive cases of ICE syndrome referred to an Ocular Oncology Service for possible iris nevus or melanoma.[26] The data revealed that corneal guttata, corneal edema, multidirectional corectopia, iris atrophy, PAS, and elevated IOP from angle closure are features suggestive of ICE syndrome compared with circumscribed or diffuse iris melanoma.[26] Features more suggestive of iris melanoma, on the other hand, included episcleral sentinel vessels, extrascleral extension of tumor, extensive iris mass, iris tumor seeds, solid mass in angle, and angle seeding.[26] Tapioca melanoma, a rare type of diffuse iris melanoma, can also mimic CRS with multiple iris tumors, heterochromia, and elevated IOP.[27-29]

REMEMBER THESE CHARACTERISITC FINDINGS

Ectropion uveae and iris nodules seen in patients with CRS can mimic the appearance of an iris melanoma. Unique to CRS and other ICE variants, however, are PAS and corneal endothelial cell dysfunction with lack of anterior chamber seeding and episcleral sentinel vessels.

In our case, the patient's left iris exhibited ectropion uveae and multiple fine nodules superotemporally with corneal endothelial guttata-like changes and PAS, suggestive of CRS. ■

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