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Manual Sics In A Case Of Iris And Choroidal Coloboma With Cataract: A Surgical Challenge

Mohana Nagpal, Samyakta Shetti

Post Graduate, Associate Professor
Department of Ophthalmology, Jawaharlal Nehru Medical College
KLE University, Belgaum, Karnataka

Abstract: Coloboma is a congenital ocular defect resulting from incomplete closure of the embryonic fissure during the 5th to 7th weeks of gestation. It may affect various ocular structures including the iris, retina, choroid, and optic nerve. Here we present a case of a 40-year-old female presented with diminished vision in the right eye since childhood, with recent worsening over the past few years. On ocular examination, she was found to have an iris coloboma inferonasally, associated with a choroidal coloboma involving the inferior fundus. Additionally, a nucleus sclerosis grade III (NS III) cataract was noted in the affected eye. The patient underwent successful manual small incision cataract surgery (SICS) with intraocular lens (IOL) implantation. Intraoperative care was taken to avoid complications related to colobomatous tissue and to ensure proper centration of the IOL. Postoperatively, the patient achieved a visual acuity of 6/60, after performing Nd:YAG laser capsulotomy, limited by the extent of the posterior segment coloboma. This case highlights the importance of careful preoperative evaluation and surgical planning in patients with colobomatous anomalies undergoing cataract surgery.

Index Terms - Coloboma, iris coloboma, choroidal coloboma, manual SICS, complicated MSICS

INTRODUCTION:

Ocular coloboma is a congenital anomaly resulting from incomplete closure of the embryonic fissure during ocular development, typically between the 5th and 7th weeks of gestation. It may affect one or multiple ocular structures. Iris coloboma typically presents as a keyhole-shaped defect, while choroidal coloboma often involves the inferonasal retina and may lead to significant visual impairment, depending on its extent and associated anomalies. Colobomatous eyes are also predisposed to additional ocular pathologies, including cataract, retinal detachment, and microphthalmia. Cataract in a colobomatous eye may develop earlier and can significantly compound the visual impairment caused by the structural defects. Surgical management in such cases is challenging due to associated anatomical variations like zonular weakness, abnormal anterior segment configuration, and potential fundus visualization difficulties.

CASE REPORT:

A 40 year old female with no comorbidities, presented with diminution of vision in right eye since childhood which worsened recently over the past 3-4 years. Clinical examination revealed visual acuity of counting finger 1 meter (CF 1 MTR) with an inferonasal iris coloboma. Further examination of the fundus unveiled an inferonasal retinochoroidal coloboma. On visualising the lens under the slit lamp, a diagnosis of cataract nucleus sclerosis grade III (NS III) was also confirmed.

Patient was posted for Manual Small Incision Cataract Surgery (MSICS) after explaining the guarded visual prognosis. The procedure was uneventful, keeping in mind the complications that might occur intraoperatively like iris prolapse, posterior capsular rupture or decentration of the IOL. Postoperative day 1 the vision was recorded to be Counting Finger Close to Face (CFCF). During follow up visit, anterior segment was examined and posterior capsule calcification was noted. 6 weeks post operatively, Nd-YAG Laser Capsulotomy was performed and unaided vision improved to 6/60. After spectacle correction, BCVA of 6/36, N24 was achieved.

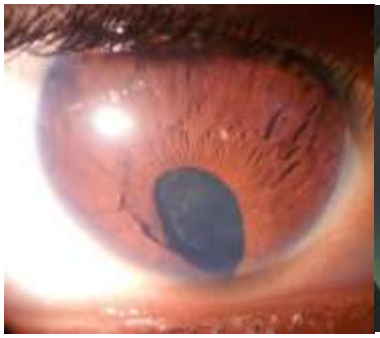

FIG 1: Pre- operative picture of Right Eye showing infero-nasal iris coloboma

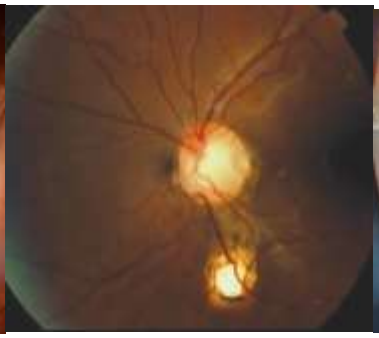

FIG 2: Right Eye showing infero-nasal retinochoroidal coloboma

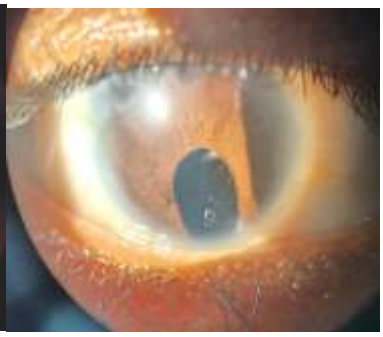

FIG 3: Post-operative picture Right Eye showing infero-nasal retinochoroidal coloboma with PCIOL

DISCUSSION:

Ocular colobomas are rare congenital defects arising from incomplete closure of the embryonic fissure [1,5]. The severity of visual impairment varies and depends largely on the extent and location of the colobomatous defect, particularly when posterior segment structures are involved [2,6].

The present case highlights a classical inferonasal iris coloboma associated with a choroidal coloboma, complicated by a visually significant nuclear sclerosis (NS III) cataract. Choroidal colobomas are known to present challenges during cataract surgery due to associated scleral thinning, poor retinal support, and an increased risk of intraoperative complications such as posterior capsular rupture or vitreous loss [4,6,10]. Furthermore, pre-existing retinal and optic nerve anomalies often limit the potential for visual recovery [5,6].

Manual Small Incision Cataract Surgery (SICS) was chosen as the surgical approach in this case, offering a safe, cost-effective method particularly well-suited for eyes with posterior segment abnormalities. Compared to phacoemulsification, SICS allows greater intraoperative control and is advantageous in resource-limited settings [9].

Literature supports the notion that while cataract surgery can improve vision in patients with ocular coloboma, final outcomes are often determined by the extent of posterior segment involvement [1,4,6,10]. Studies have emphasized the importance of comprehensive preoperative evaluation, including B-scan ultrasonography and optical coherence tomography (OCT), to assess macular integrity [2,6]. Additionally, patient counseling regarding prognosis remains essential [5,10].

CONCLUSION:

Cataract surgery in eyes with ocular coloboma presents unique surgical and prognostic challenges. Thorough preoperative assessment, careful intraoperative technique, and vigilant postoperative monitoring are critical to achieving favorable outcomes [1,4,6]. Although visual recovery may be limited by coexisting choroidal or retinal abnormalities, appropriately planned surgery can still offer meaningful improvement in visual function and quality of life [1,4]. This case reinforces the importance of individualized surgical planning and realistic patient counseling, particularly when macular involvement is suspected or confirmed [5,6,10].

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