VOLUME - 14, ISSUE - 07, JULY - 2025 • PRINT ISSN No. 2277 - 8160 • DOI : 10.36106/gjra

Original Research Paper
Ophthalomology

SPONTANEOUS ANTERIOR DISLOCATION OF A MICROSPHEROPHAKIC CATARACTOUS LENS IN A NON-SYNDROMIC ADULT: A CASE REPORT

Dr Sanjana Shah	Fellow , Sankara Eye Hospital, Anand
Dr Nisha Ahuja	M.B.B.S., D.O.M.S, F.C.R.S., Sankara Eye Hospital, Anand
Dr Karishma Dubey	M.B.B.S, D.N.B, F.I.O.L, Sankara Eye Hospital, Varanasi
Dr Afsa Rathod*	Fellow, Sankara Eye Hospital, Anand *Corresponding Author

ABSTRACT Microspherophakia is a rare abnormality of the crystalline lens, marked by reduced equatorial diameter and increased lens thickness. We report a rare case of spontaneous anterior dislocation of a cataractous microspherophakic lens in a 50-year-old non-syndromic female who presented with sudden, painless vision loss in the right eye. Slit-lamp examination revealed a small, spherical lens dislocated into the anterior chamber, with no signs of trauma or inflammation. Systemic assessment revealed no features suggestive of associated syndromes such as Marfan or Weill–Marchesani. The patient underwent successful intracapsular lens extraction followed by retropupillary iris-claw intraocular lens implantation, resulting in a best-corrected visual acuity of 6/12. Family screening identified bilateral microspherophakia in her son, indicating a likely hereditary etiology. This case highlights the importance of recognizing isolated microspherophakia as a potential cause of spontaneous lens dislocation in adults and emphasizes the value of timely surgical intervention and family evaluation.

KEYWORDS : microspherophakia, anterior lens disclocation, iris-claw intraocular lens.

INTRODUCTION:

Microspherophakia is a rare congenital lens anomaly marked by a decreased equatorial diameter and increased anteroposterior thickness of the crystalline lens, often resulting in a spherical appearance. This anatomical defect arises due to underdeveloped or weakened zonular fibres and may present either as an isolated condition or in association with systemic syndromes like Weill–Marchesani, Marfan syndrome, homocystinuria, and Alport syndrome [1,2]. Isolated, non-syndromic microspherophakia is particularly rare and has been documented sporadically across various ethnic groups [3].

The spherical lens predisposes patients to high lenticular myopia, subluxation or dislocation, pupillary block, and secondary glaucoma [4]. Anterior dislocation of the lens, especially in the absence of trauma or systemic disease, is uncommon and poses unique diagnostic and management challenges. We report a rare case of spontaneous anterior dislocation of a microspherophakic cataractous lens in a non-syndromic adult female, successfully managed with cataract extraction and iris-claw intraocular lens implantation.

Case Report:

A 50-year-old female presented with a chief complaint of sudden painless diminution of vision in her right eye over the past few days. There was no history of trauma, ocular surgery, or systemic illnesses. Visual acuity in the right eye was counting fingers close to face, and 6/9 in the left eye.

Slit-lamp examination revealed a dislocated, cataractous crystalline lens in the anterior chamber (AC) of the right eye. The anterior chamber was deep and quiet with no evidence of inflammation. Corneal endothelial touch was noted, but intraocular pressure (IOP) was within normal limits (14 mmHg). The dislocated lens was small, spherical, and thick—features suggestive of microspherophakia. Dilated fundus examination of the right eye was limited due to the dislocated lens but B scam ultrasonography was within normal limits. The left eye exhibited a clear lens with zonular instability and phacodonesis. Gonioscopy in the left eye showed open angles, and IOP was 15 mmHg. The left eye fundus showed a normal optic disc with a cup-to-disc ratio of 0.3, healthy macula, and peripheral retina within normal limits.

Systemic evaluation, including cardiovascular, musculoskeletal, and dermatologic assessments, showed no signs of syndromic associations. No features suggestive of Marfan syndrome (e.g., tall stature, arachnodactyly), Weill–Marchesani syndrome (e.g., short stature, brachydactyly), or homocystinuria (e.g., ectopia lentis with systemic vascular findings) were present.

Given the absence of systemic findings, a diagnosis of isolated microspherophakia with anterior dislocation of the cataractous lens in the right eye was made. Further family screening revealed bilateral microspherophakia in the patient's 22-year-old son, who had high myopia but no lens subluxation or glaucoma.

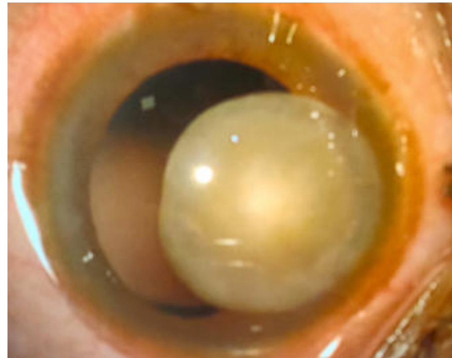

Figure 1: the image shows a small, spherical microspherophakic cataractous lens dislocated into the anterior chamber.

Surgical Description:

The patient underwent intracapsular lens extraction via a corneoscleral approach under local anesthesia. After the viscoelastic-assisted removal of the dislocated lens, a retropupillary iris-claw intraocular lens (IOL) was implanted in the right eye, enclavated to the mid-peripheral iris for stable fixation. No intraoperative complications were noted.

Postoperative management included topical antibiotics and corticosteroids. On day one, the IOL was well-centered, the AC was quiet, and corneal edema had subsided. At 1-month follow-up, the best corrected visual acuity in the right eye was 6/12, with a clear cornea and normal IOP.

DISCUSSION:

Microspherophakia is primarily caused by developmental anomalies of the zonular apparatus, leading to a lens that is more spherical and anteriorly mobile. The condition often manifests in adolescence or early adulthood with visual disturbances due to high myopia, lens subluxation, or secondary glaucoma [4]. In this case, the spontaneous anterior dislocation of a cataractous microspherophakic lens in a middle-aged adult, without preceding trauma or signs of glaucoma, is an unusual presentation.

Anterior lens dislocation may result in corneal endothelial damage, acute angle closure, or lens-induced uveitis. Timely surgical intervention is crucial to avoid permanent corneal or optic nerve damage [6]. Iris-claw IOLs have emerged as a favourable option in cases where capsular or sulcus support is compromised. They offer stable fixation, low complication rates, and good visual outcomes in aphakic eyes, particularly when posterior chamber IOL implantation is not feasible [7].

Genetic studies have shown that mutations in LTBP2, encoding latent transforming growth factor beta-binding protein 2, are associated with autosomal recessive microspherophakia and ectopia lentis. Although genetic confirmation was not performed in our case, the familial clustering strengthens the likelihood of a hereditary basis [5]. Early diagnosis of microspherophakia, regular IOP monitoring, and genetic counselling are key components of long-term management, especially in asymptomatic family member.

CONCLUSION:

This case highlights the importance of recognizing microspherophakia as a potential cause of spontaneous lens dislocation in adults, even in the absence of systemic syndromes. Timely surgical intervention with iris-claw IOL implantation offers good visual rehabilitation. Familial screening is critical in identifying at-risk individuals, and genetic counselling may aid in long-term care and prevention strategies.

REFERENCES:

1. Johnson GJ, Bosanquet RC. Spherophakia in a Newfoundland family: 8 years experience. Can J Ophthalmol. 1983;18(4):159–164.
2. Asaoka R, Kato M, Suami M, Usami Y, Hotta Y, Sato M. Chronic angle closure glaucoma secondary to frail zonular fibres and spherophakia. Acta Ophthalmol Scand. 2003;81(5):533–535.
3. Bitar MS, Farooq AV, Abbasian J. Challenges in diagnosing microspherophakia in a pediatric patient. JSM Ophthalmol. 2016;4:1040.
4. Sauer A, Speeg-Schatz C. [Anterior lens dislocation in the setting of microspherophakia]. J Fr Ophtalmol. 2013;36(2):186.
5. Khan AO, Aldahmesh MA, Alkuraya FS. Genetic and genomic basis of microspherophakia. Mol Vis. 2011;17:2287–2290.
6. Senthil S, Rao HL, Hoang NT, et al. Surgical outcomes in patients with microspherophakia. J Glaucoma. 2013;22(7):517–521.
7. Gicquel JJ, Langman ME, Dua HS. Iris claw lenses in aphakia. Br J Ophthalmol. 2009;93(10):1273–1275.