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Case Report

A rare complication: Orbital cellulitis with pan-ophthalmritis after cataract surgery

Gulshan Barwar^{1*}, Neeraj Apoorva Shah², Shashya Agarwal³, Atish Kumar⁴

¹Dept. of Vitreo-Retina Services, Sankara Eye Hospital, Jaipur, Rajasthan, India

²Dept. of Cornea, Refractive and Cataract Services, Sankara Eye Hospital, Jaipur, Rajasthan, India

³Sankara Eye Hospital, Jaipur, Rajasthan, India

⁴Dept. of Cataract Services, Sankara Eye Hospital, Jaipur, Rajasthan, India



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ABSTRACT

A 52 years old male presented with severe pain, redness, watering and swelling of left eye since 4 days after cataract surgery. Surgery performed was small incision cataract surgery with temporal scleral section performed under peri-bulbar anesthesia. Patient had posterior capsular rent and iatrogenic zonular dialysis intra-operatively and iris claw lens was placed. On clinical examination, patient had developed Orbital cellulitis with pan-ophthalmritis post cataract surgery.

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1. Introduction

Orbital cellulitis is defined as an infection that involves the muscle and fat located within the orbit. The most important distinguishing feature of orbital cellulitis is the presence of ophthalmoplegia, the presence of pain with eye movement, and/or proptosis along with eyelid swelling with or without erythema.¹ Orbital cellulitis as a complication of ocular surgery is uncommon.^{2,3} Orbital cellulitis following cataract surgery performed under peribulbar anaesthetic block has been reported in three cases²⁻⁴ and in another three cases following sub-Tenon's fascia anaesthesia.^{5,6}

Orbital cellulitis along with pan-ophthalmritis is a rare occurrence, most commonly being trauma-related or endogenous.⁷

Pan-ophthalmritis is a purulent inflammation of all the coats of the eyes and the intraocular contents, resulting from either an endogenous or exogenous source of infection.⁸

2. Case Report

A 52 years old male presented with severe pain, redness, watering, foreign body sensation and swelling of left eye since 4 days after cataract surgery. Surgery performed was small incision cataract surgery with temporal scleral section done under peri-bulbar anesthesia. Pre-operative best corrected visual acuity (BCVA) for left eye was perception of light, accurate in all four quadrants due to presence of mature cataract, and 20/20 and N6 in right eye which was pseudo-phakic. Pre-operative ultrasound B-scan had anechoic vitreous cavity with retina on and normal retino-choroidal thickness (1.7 mm).(Figure 1 E)

Intra-operatively, patient had posterior capsular rent with zonular dialysis in 5 clock hours. After extensive anterior vitrectomy, a rigid retro-pupillary iris claw lens was placed. Temporal scleral tunnel was sutured with 5 interrupted 10-0 nylon sutures.

BCVA on post-operative day 1 was 20/100 due to central corneal edema. Anterior chamber was deep and quiet. Iris claw lens was in place and fundus details were visible with cup disc ratio 0.4:1, dull foveal reflex and peripheral retina

* Corresponding author.

E-mail address: gulshan711@gmail.com (G. Barwar).

was on. Patient was discharged on topical antibiotics and topical steroids eyedrops, 6 times a day and was asked to follow-up after 7 days. Patient came back after 4 days with the presenting symptoms and BCVA, No perception of light.

On examination, proptosis was noted, upper and lower eyelids were edematous, and there was matting of eyelashes with mucopurulent discharge. (Figure 1 A)

Extraocular movements were restricted. Generalized conjunctival congestion and chemosis was noted.(Figure 1 C, D)

Corneal sensations were absent in all the quadrants and corneal edema along with ring infiltrate in peripheral cornea was seen.(Figure 1 B)

Anterior chamber, lenticular details and posterior segment details could not be seen through the cornea.

Globe was digitally tense and tender.

On B-scan ultrasonography, anechoic mid vitreous cavity at low gain (40 dB) due to extensive anterior vitrectomy was seen. Multiple dot like, moderate amplitude echogenicity near the coats suggestive of vitreous exudates. Retina was attached with increased retino-choroidal thickness (3 mm).

Patient did not give any history of ocular trauma in past 4 days after cataract surgery. There was no history of acute or chronic dacryocystitis. Regurgitation on pressure over lacrimal sac area (ROPLAS) was negative.

No history of fever in recent past, any systemic illness or morbidity, infection of teeth or any endocrinal disorder was present. Patient did not give any positive history of sinusitis.

Conjunctival swab culture, total and differential blood count, blood culture and Magnetic Resonance Imaging (MRI) of brain and orbit were advised.

Patient was admitted and started on parenteral third generation Cephalosporin (Intravenous Ceftriaxone 1 gram two times a days) and intravenous Metronidazole 500 mg three times a day for 1 week. Oral steroids, 1mg/kg of body weight were started. Topical Moxifloxacin 0.5% and fortified Vancomycin 5% eyedrops were started along with topical eyedrop Prednisolone acetate 1%, 12 times a day. Topical cycloplegic (Homatropine 2%) eyedrop and anti-glaucoma eyedrop (Brimonidine Tartrate 2 mg + Timolol Maleate 5 mg) were started two times a day along with oral analgesic.

Conjunctival swab for Gram's stain, Giemsa stain and Potassium Hydroxide (KOH) mount was negative for any organism.

Complete blood count showed mild leukocytosis. Patient did not get MRI done.

After 1 week of treatment, patient was symptomatically better. Intravenous antibiotics were stopped and oral steroids were weekly tapered by 10 mg. Frequency of topical antibiotics were reduced to 6 times a day and topical steroids were tapered. Cycloplegics and anti-glaucoma medications were continued and patient was called after 2 weeks.

On day 21, patient was even better symptomatically. Conjunctival congestion had decreased and chemosis was resolved. Corneal infiltrates were resolving and leucomatous scar had started to develop.

Cycloplegics and anti-glaucoma medications were stopped. Topical antibiotics were tapered down to 4 times a day for 2 weeks. Topical and oral steroids were weekly tapered, and patient was asked to follow-up after 1 month.



Figure 1: Digital camera photo (A) shows normal right eye and left eye upper and lower eyelid edema, matted lashes and mucopurulent discharge on day 1. Slit lamp photo (B) shows conjunctival congestion, chemosis and corneal opacity with ring infiltrate. Digital (C) and Slit-lamp photo (D) of day 21, shows decreased conjunctival congestion and chemosis with corneal scarring. Ultrasound (E) shows vitreous exudates near the coats with increased retino-choroidal thickness

3. Discussion

Orbital cellulitis as a complication of cataract surgery is rare.^{2,3} It is recommended that povidone-iodine should be used before administration of a peribulbar block.^{3,9} In this case the most likely cause of cellulitis is surgical trauma during administration of the peribulbar block.

Orbital cellulitis is usually treated with parenteral broad-spectrum antibiotics such as third or fourth generation

cephalosporin's and metronidazole to cover anaerobes. Skin preparation 5–10 minutes before peribulbar anaesthesia⁹ should be performed in all cases in order to reduce the incidence of cellulitis, with minimal soft tissue trauma during peribulbar anaesthesia.

Ours is a unique case that had orbital cellulitis with pan-ophthalmitis following small incision cataract surgery. Literature search was done, but none of the published case report shows presence of both, orbital cellulitis and pan-ophthalmitis after cataract surgery.

4. Declaration of Patient Consent

The author certify that they have obtained all appropriate patient consent forms. In the form the patient has / have given his/her consent for his/her image and other clinical information to be reported in the journal. The patient 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.

5. Source of Funding

None.

6. Conflict of Interest

No conflicts of interest.

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Author's biography

Gulshan Barwar, Consultant Vitreo-Retina  <https://orcid.org/0009-0004-5228-3177>

Neeraj Apoorva Shah, Consultant Cornea and Refractive Services

Shashya Agarwal, IOL Fellow

Atish Kumar, Consultant Cataract Services

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