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Case Report

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Orbital Cellulitis Post Uneventful Phacoemulsification

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ABSTRACT

The aim of this study was to report a case of orbital cellulitis that occurred after routine uneventful cataract operation (Phacoemusification) under peribulbar anaesthesia in southern region of India. A complete ophthalmic evaluation, systemic evaluation, investigations, treatment and follow up of a 60 year old male patient was done. Orbital cellulits following cataract surgery is extremely rare. A timely diagnosis was made and the patient was treated with intravenous antibiotics. Patient did not have any predisposing risk factors; therefore most likely cause of cellulitis was surgical trauma during administration of the peribulbar block. This case illustrates the need for adequate skin preparation before the administration of peribulbar anaesthesia and minimal tissue trauma during the procedure.

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Introduction

Orbital cellulitis is a clinical condition arising usually from a complication of paranasal sinus infection and affecting soft tissues of the orbit, posterior to the orbital septum [1, 2]. It is a relatively common disease of developing countries, with a frequency ranging between 21-90%. It has various causes and may be associated with serious complications, cavernous sinus thrombosis being the most dangerous, resulting in visual loss and death [3]. Prompt diagnosis and treatment are essential for treatment of this condition. However, it is an uncommon complication of ophthalmic surgery. Cases have been reported after strabismus surgery, blepharoplasty, radial keratomy and retinal surgery. Various case reports on orbital cellulitis following peribulbar anaesthesia have been described before, alcohol preparation thought to be a contributory factor [4, 5].

Case Report

A 60 year old male was admitted to our hospital with a history of diminishing of vision in right eye since 6 months. He had undergone phacoemulsification with posterior intraocular lens implantation in his left eye 1 year ago. Medical history and Family history were non-significant.

Pre Op Examination

On examination, his vision in right eye was 2/60, PH No improvement, Left eye was 6/12, PH 6/9. Extraocular movements were full and normal. Anterior Segment showed right eye senile immature cataract, grade 3 with posterior subcapsular cataract, left eye had pseudophakia. Both the pupils were reactive to light, no APD was noted. Posterior segment showed CDR 0.3, macula normal, retina on. Intraocular pressure was 14 mm Hg for the right eye, and 16 mm Hg for the left eye. Keratometry readings for the right eye were K1 44.50, K2 45.00. A scan Biometry showed right eye AXL 21.7 mm, A Constant 118.20, IOL Power 21.50 D.

Treatment Plan

Phacoemulsification and posterior chamber intraocular lens implantation in the right eye under local anesthesia was planned for him. Skin preparation with 5% povidone iodine was done prior to peribulbar block. A peribulbar injection consisting of 2% lignocaine hydrochloride, 0.75% bupivacaine hydrochloride and hyaluronidase 1500 units was administered. A total of 4 ml was injected at the junction of the middle and outer thirds of the lower lid and 2.5 ml at the medial canthus via a 3/8-inch, 25-gauge needle. Patient underwent uneventful phacoemulsification and posterior chamber intraocular lens implantation in the right eye.

Right eye Post Op Examination Day 1

On examination right eye vision was 6/36, PH No improvement, color vision was normal. Severe restriction of ocular movements was noted. Adenexa showed 5mm of axial proptosis, periorbital swelling, lid was tense and difficult to open. Right eye anterior segment showed conjunctival chemosis, Anterior chamber showed a trace of cells and flare, PCIOL in bag. Pupil was reactive to light, no APD. Posterior segment was CDR 0.3 with macula normal, retina on. Intraocular pressure in right eye was15 mm Hg [Figure 1].

Figure 1

Diagnosis
A diagnosis of right eye orbital cellulitis was made.

Management
The patient was admitted to hospital. Intravenous antibiotics in addition to antibiotic-steroid combination eyedrops were started. Intravenous cefotaxim 1gm BD, metronidazole 1 vial BD and gentamicin 80 mg BD were administered to provide Gram-positive and Gram-negative coverage. CT scan orbit and paranasal sinuses showed the right eye to be proptosed, with extensive periorbital soft-tissue swelling consistent with orbital cellulitis (Figure 2). The adjacent sinuses were clear and without evidence of sinusitis. Culture of conjunctiva, nose and pharynx was negative. Blood cultures were also negative. The leucocyte count showed mild leucocytosis. Renal function tests and blood gentamicin levels were regularly monitored to prevent renal toxicity.

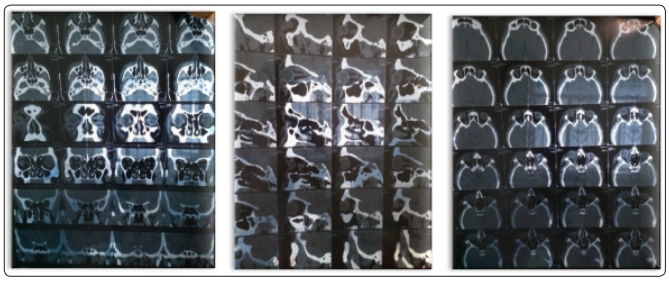

Figure 2

Post Op Examinations
On continuous post op examinations dramatic improvement in the proptosis and ocular inflammation were seen over the next 24 hours. The ocular motility gradually improved with reduction in periorbital swelling. At the time of discharge, right eye uncorrected visual acuity was 6/9 and there was complete recovery within a week [Figure 3].

Figure 3

Discussion
Orbital cellulitis following peribulbar anaesthesia for combined extracapsular cataract extraction with intraocular lens insertion and trabeculectomy has been reported by [6]. They felt that skin preparation with alcohol prior to injection of the local anaesthetic instead of povidone iodine resulted in incomplete asepsis, thus leading to access of the skin flora into the orbit [7]. Reported orbital cellulitis following corneal gluing under subtenon's local anaesthesia in an immunocompromised patient. Here altered conjunctival flora due to intake of systemic immunosuppressives had been the predisposing factor. In our patient, the short postoperative time course (less than 48 h), absence of sinus disease and occurrence of skin trauma during injection in an otherwise immunocompetent patient indicate peribulbar injection as the possible cause of periorbital cellulitis. However, in spite of skin preparation with 5% povidone iodine it is likely that trauma during injection resulted in the access of the skin flora to the orbit through the needle track causing cellulitis. The ecchymosis facilitated the spread of infection. Prompt recognition and treatment of cellulitis resulted in a favorable outcome.

Conclusion
Orbital cellulitis is usually treated with parenteral broad spectrum antibiotics such as third or fourth generation cephalosporins and metronidazole to cover most organisms. However, blood gentamicin levels and renal function test need to be closely monitored to prevent renal toxicity. It is suggested that an aseptic technique should be used with minimal soft tissue trauma during peribulbar anaesthesia.

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