



ENDOGENOUS ENDOPHTHALMITIS SECONDARY TO INFECTIVE ENDOCARDITIS IN A HEMODIALYSIS PATIENT

Ophthalmology

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ABSTRACT

An unusual intraocular infection can have catastrophic visual effects is endogenous endophthalmitis that's brought about by the hematogenous spread of infective organisms from distant sites. Staphylococcus aureus and Streptococcus pneumoniae are the most common causative bacteria. It is a diagnostic and therapeutic emergency involving the ocular prognosis and which may be due to life-threatening diseases. Here we report a case of a 55-year-old male with CKD-Stage V on 2/weekly hemodialysis, systemic hypertension for 6 years and recurrent anemia on blood transfusions regularly, presented to our OPD with redness, watering, discharge, photophobia, and diminution of vision in left eye since 5 days. Blood culture and sensitivity showed Staphylococcus aureus while 2 D Echo showed infective endocarditis. The patient was administered intravenous antibiotics along with intravitreal antibiotic injections. This resulted in significant systemic improvement, and the outlook for their eye condition was favorable.

KEYWORDS

endophthalmitis, infective endocarditis, hemodialysis, staphylococcus aureus

INTRODUCTION:

Endophthalmitis is a purulent inflammation of the intraocular fluids (vitreous and aqueous), typically caused by infection. It is a severe intraocular inflammatory condition resulting from infection within the vitreous cavity. The hallmark of all forms of endophthalmitis is progressive vitritis. Histologically, it is characterized by extensive infiltration of the vitreous cavity with inflammatory cells. Endophthalmitis can be classified into two types: exogenous and endogenous.

Key risk factors for endogenous endophthalmitis include conditions that weaken the immune system, such as long-term corticosteroid use, cancer, advanced liver or kidney disease, organ transplants, and diabetes. Other contributing factors include infective endocarditis, intravenous drug use, indwelling catheters, and dental treatments.

CASE STUDY:

A 55-year-old male with CKD-Stage V for 3 years on 2/weekly hemodialysis (outside hospital), Systemic hypertension since 6 years and recurrent anemia on blood transfusions regularly, presented to our OPD with redness, watering, discharge, photophobia, and diminution of vision in left eye since 5 days.

He had also been experiencing fever, abdominal pain, decreased appetite and generalized weakness.

On ocular examination:

- Right eye vision aided was 6/6 and findings of anterior segment were within normal limits, fundus showed grade 2 hypertensive changes
- His left eye vision was PL+, PR accurate, had chemosis, cornea was slightly hazy with few descemet's folds, cells 3-4 and flare with membranes over pupillary area. Intraocular pressure was 12mmHg, fundus could not be visualized.

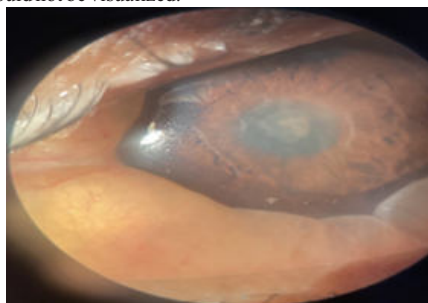


Figure 1: Slit lamp examination of left eye showing chemosis, hazy

cornea, few descemet's folds and membranes over pupillary area. B- Scan showed hyperechoic exudates in the vitreous

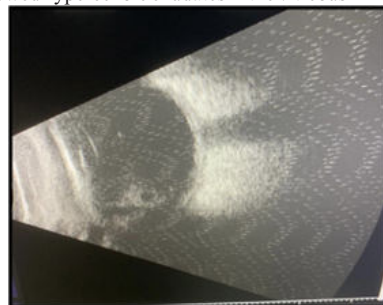


Figure 2: B- Scan showed hyperechoic collection in the vitreous

On systemic examination, he was febrile, and pallor was present. With the above-mentioned findings, he was diagnosed with left eye **ENDOGENOUS ENDOPHTHALMITIS**.

INVESTIGATIONS:

A laboratory investigation revealed an increased neutrophil count of 12,400/ μ L and a C-reactive protein (CRP) level of 25.21 mg/dL, ESR: 70mm/hr, Hb-5.0gm/dL.

Blood culture and sensitivity showed Staphylococcus aureus (MRSA), Aqueous tap did not show any growth.

Table 1: Blood Culture And Sensitivity

Antibiotic	MIC	Result	Antibiotic	MIC	Result
Cefoxitin screen	Pos	+	Clindamycin	0.25	S
Benzylpenicillin	≥ 0.5	R	Linezolid	2	S
Oxacillin	≥ 4	R			
			Telcoplanin	≤ 0.5	S
Gentamicin	1	S	Vancomycin	1	S
Ciprofloxacin	4	R	Tetracycline	≤ 1	S
Levofloxacin	4	R			
Inducible Clindamycin resistance	Neg	-			
Erythromycin	≤ 0.25	S	Trimethoprim/Sulfamethoxazole	≤ 10	S

- 2 D Echo showed infective endocarditis (10x4mm vegetation attached to the aortic valve)
- Ultrasound of abdomen and pelvis showed Bilateral grade II renal parenchymal change, Bilateral multiple renal cortical cysts,

Prostatomegaly.

We suspected infective endocarditis which might have been due to dialysis that led to a septic focus infecting the left eye causing endogenous bacterial endophthalmitis.

MANAGEMENT:

- Patient underwent 2 doses of Intravitreal antibiotics injection (0.1ml of PIPTAZ + 0.1ml of VANCOMYCIN) under TA 1 week apart
- And was on eyedrops in LE –steroid antibiotic, cycloplegics
- Systemic antibiotics:
- IV inj. Piperacillin + Tazobactam 2.25g IV 1-1-1 (8th hourly)
- IV inj Vancomycin 1g IV once in 96hrs (4hrs)

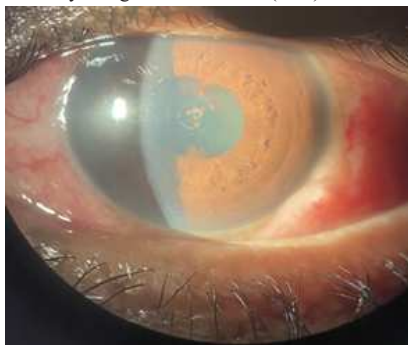


Figure 3: Slit lamp examination: Status post first dose of intravitreal injection

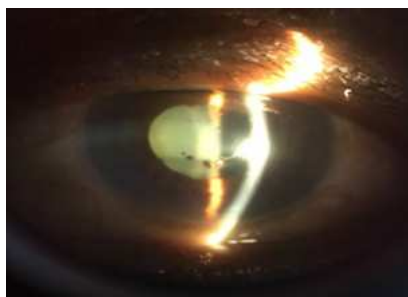


Figure 4: Slit lamp examination: Status post second dose of intravitreal injection

On follow up- his vision improved to counting fingers at 3 meters and eye was quiet.

DISCUSSION:

- Endophthalmitis is defined as an internal infection of the eye involving the vitreous or aqueous humor that can be classified as either endogenous or exogenous depending on the route of infection.
- Endogenous endophthalmitis accounts for only 5–7% of endophthalmitis cases and has a high mortality rate of up to 29% with poor visual acuity outcomes; it is associated with underlying medical conditions such as diabetes or cardiac diseases or CKD and malignancy in up to 90% of patients.
- Endogenous endophthalmitis accounts for 2–8% of endophthalmitis. It can affect one or both eyes, and the second eye may be affected simultaneously or after a period of time.
- The present patient was diagnosed with infective endocarditis. However, this was due to bacteremia due to dialysis as the source of sepsis.

CONCLUSION:

Early and prompt diagnosis followed by precise & timely medical & surgical management of endogenous endophthalmitis and to keep a watch on patients who undergo dialysis - can lead to better prognostic outcome.

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