



FIRST CASE REPORT OF TRAUMATIC ENDOPHTHALMITIS CAUSED BY THE STAPHYLOCOCCUS WARNERI

Sahitya Tatineni¹, Nidhi Relhan¹, Swapna Reddy Motukupally², Guru Prasad Manderwad^{2*}

¹Srimati Kanuri Santhamma Centre for vitreo-retinal diseases, Kallam Anjireddy Campus, L.V. Prasad Eye Institute, Banjara Hills, Hyderabad, India

²Jhaveri, Microbiology centre, Prof Brien Holden Eye Research Centre, Kallam AnjiReddy Campus, L.V. Prasad Eye Institute, Banjara Hills, Hyderabad, India

***Corresponding Author:** Dr. Guru Prasad Manderwad, Microbiologist, Scientist Grade-I, Jhaveri Microbiology Centre, Prof. Brien Holden Eye Research Centre, Kallam Anji Reddy Campus, L.V. Prasad Eye Institute, Banjara Hills, Hyderabad, India

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Abstract: Endophthalmitis is the intraocular inflammation involving the anterior chamber and vitreous of the eye. It is associated with infectious (bacterial or fungal) or non infectious stimuli including lens toxic material released during the surgery. We report a rare organism for the first time, the isolation of *Staphylococcus warneri* from the post-traumatic endophthalmitis case.

Keywords: Endophthalmitis, *Staphylococcus warneri*, Case Report

CASE REPORT

A 65 year old male presented with pain, redness, watering and decreased vision in the right eye following thorn injury. On examination the visual acuity in the right eye was counting fingers at 2 meters; IOP was 6mmHg, anterior segment examination showed conjunctival congestion, chemosis, anterior chamber flare with cells. Prior to the visit to our institute, he was treated with moxifloxacin eye drops 3times/day. While on fundus evaluation there was hazy media, dense vitreous opacities, normal appearing disc and attached retina throughout.

Wound exploration was done with scleral tear repair of wound with measurement <1 mm x <1 mm, noted 2mm from limbus at 6'clock and closed with 7-0 vicryl mattress suture. After taking an undiluted vitreous biopsy with a single scleral port 20-gauge vitrectomy cutter at 10'clock 4mm away from limbus for culture, intravitreal antibiotics, vancomycin 1mg/0.1ml, ceftazidime 2.25mg in 0.1ml, voriconazole was administered.

Figure.1:



Legends

Figure.1a: Turbidity seen in I) Thioglycolate broth and II) Brain heart infusion broth

Figure.1b: I) subculture of thioglycolate broth on blood agar showed the white opaque moist colonies,

II) Subculture of Brain heart infusion broth on blood agar showed the white opaque moist colonies

Figure.1c: Fundus picture of the retina with resolution of all retinal signs



Microbiological Evaluation:

The vitreous biopsy received in the syringe, a direct smear examination was done using KOH/CFW, gram stain and giemsa stain. The vitreous biopsy inoculated in the enriched media Chocolate agar, Blood agar, Sabouraud's dextrose agar, Potato dextrose agar and liquid media including Brain heart infusion broth and Thioglycolate broth. Direct smear examination revealed- KOH/CFW- no organisms, gram stain showed the presence of polymorphs 0-3/OIF, no organisms seen, giemsa stain also showed presence of polymorphs 0-3/OIF with no organisms. The chocolate agar and blood agar were incubated at 37°C, and Sabouraud's dextrose agar, Potato dextrose agar at 25°C. No growth was noticed in the entire solid agar media incubated for 7 days. The turbid growth was noticed in the both liquid culture broth on the next day of incubation (Figure 1a). The turbid broth from the both media were sub cultured on the blood agar and incubated overnight at 37°C. White opaque moist colonies were grown (Figure 1b) and culture smear revealed the presence of gram positive cocci arranged in clusters. Biochemical evaluation showed it was a catalase positive and coagulase negative. The organism identified as the *Staphylococcus warneri* using VITEK II compact system (Biomereux, France). The organism was found to be sensitive to ciprofloxacin, ofloxacin, cefuroxime, oxacillin and ceftiofur (methicillin), amikacin, cefazolin, gentamicin, vancomycin, gatifloxacin, moxifloxacin and chloramphenicol.

Postoperative treatment included with tablet ciprofloxacin 750mg BD, eye drop cefazolin 5% hourly, ciprofloxacin 0.3% eye drops hourly and eye drop Atropine 1% eye drops TDS. Final uncorrected visual acuity was 20/20 at 6 weeks postoperatively with resolution of all retinal signs (Figure.1c)

DISCUSSION

Endophthalmitis is the inflammation of the intraocular involving vitreous and anterior chamber of the eye. It might be infectious and non-infectious. Endophthalmitis due to the post traumatic are generally result with the poor prognosis and it is a therapeutic challenge. Studies have shown with good as well as poor outcome in post traumatic endophthalmitis. A study conducted by the Vivek et al.,¹ analyzed the clinical profile and predictive factors for post trauma endophthalmitis and predicted that bad prognosis with poor visual outcome was seen with penetrating injury associated with gram negative organism in the culture and better visual outcome noticed with the growth of gram positive organisms in

the culture. Ligette et al.,² had evaluated ocular trauma in urban population and concluded that ocular trauma is more common in the male in their third decade of their life and blunt trauma was the most commonest type of injury. Ocular trauma was associated with hyperemia is the most common diagnosis³. A study conducted by the Kunimoto et al had shown that in traumatic endophthalmitis, 64% of the isolates were gram positive cocci including coagulase negative *Staphylococcus epidermidis* followed by *Streptococcus* Sp. In the present case report, we are reporting first time the isolation of *Staphylococcus warneri*, a coagulase negative *Staphylococcus* (CoNS). *Staphylococcus warneri* is a commensal present on the skin in more than 50% of human population. It is usually associated with the nosocomial infection such as septicemia, endocarditis, discitis, urinary tract infection and septic arthritis^{5,6,7,8}. In the present context we also like to stress the importance of the liquid culture media for the isolation of low virulent organisms. In our case the patient with the thorn post endophthalmitis presented early in the event so we were able to salvage the eye as well as vision.

REFERENCES

1. Vivek Som, Girish Gadre, Amit Pawar. Clinical profile and predictive factors for post trauma endophthalmitis intervened by vitreoretinal surgery. AIOO 2009 PROCEEDINGS.
2. Liggett P E Pince KJ, Barlow W, Ragen M, Ryan SJ et al Study of ocular trauma in urban population. Review of cases 1132 cases. Ophthalmol. 1990, 97, 581-584.
3. Maltzman BA, Pruzon H, Mund ML A survey of ocular trauma. Surv ophthalmol. 1976, 21, 285-290.
4. Kunimoto DY, Das T, Sharma S, Jalali S, Majji AB, Gopinathan U, Athmanathan S, Rao TN. Microbiologic spectrum and susceptibility of isolates: part II. Posttraumatic endophthalmitis. Endophthalmitis Research Group. Am J Ophthalmol. 1999, 128, 242-244.
5. Announ N, Mattei JP, Jaoua S, et al. Multifocal discitis caused by *Staphylococcus warneri*. Joint Bone Spine. 2004, 71, 240-242.
6. Töllberger C, Wechsler-Fördös A, Geppert F, et al. *Staphylococcus warneri* endocarditis after implantation of a lumbar disc prosthesis in an immune competent patient. J Infect. 2006, 52, 15-18.
7. Legius B, Landuyt KV, Verschueren P, Westhovens R. Septic arthritis due to *Staphylococcus warneri*: a diagnostic challenge. Open Rheumatol J. 2012, 6, 310-311.
8. Kamath U, Singer C, Isenberg HD. Clinical significance of *Staphylococcus warneri* bacteremia. J Clin Microbiol. 1992, 30, 261-4.

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