



A Rare Presentation of Scleral Abscess in Dengue Fever

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ABSTRACT

A young male patient with febrile illness presented with acute onset pain and redness in right eye. Clinical picture was suggestive of infectious scleritis and culture from the scleral abscess showed growth of *Pseudomonas aeruginosa*. Patient showed good response to systemic and topical antibiotic with complete resolution of scleritis. This is the first documented culture positive infectious scleritis case in a dengue patient and the favorable outcome emphasizes the need for early recognition and aggressive management in such cases.

Keywords: Dengue fever; Infectious scleritis; *Pseudomonas aeruginosa*

INTRODUCTION

Dengue fever has a myriad of ophthalmic manifestations ranging from innocuous sub conjunctival hemorrhage to sight threatening panophthalmitis. Although ocular complications are uncommon among dengue fever-infected patients, caution is needed to prevent vision loss. Here we report a potentially serious sight-threatening complication of dengue fever, dengue fever-associated necrotizing scleritis. Most of the serious ocular complications are seen with associated thrombocytopenia. We report a case of culture positive infectious scleritis in a dengue positive patient with no associated thrombocytopenia.

CASE PRESENTATION

An 18 years old male presented to Eye OPD of a tertiary care hospital with complaints of pain and redness in right eye for one day duration. He gave history of fever since last 3 days with severe headache and body ache. Here this case suggests the existence of a long-term immune-mediated mechanism during the development of the dengue fever-associated necrotizing scleritis. Dengue fever virus patients found to have red eyes need to be carefully followed and treated, as these eyes might develop thinning of the sclera that could lead to rupture of the globe, thereby resulting in blindness. There was no preceding history of joint pains, respiratory illness or skin rashes. He denied any history of ocular trauma or bathing in swimming pool. On examination visual acuity in both eyes was 6/6. In right eye there

was purulent discharge in lower palpebral fissure. No foreign body was seen in palpebral conjunctiva or fornix. There was sectoral scleral congestion in superonasal quadrant with a well excavated punched out scleral lesion measuring 2.5 mm × 1.5 mm in size. The margins of the scleral lesion were well defined and base had purulent discharge. There was tenderness on palpation over the lesion. Cornea was clear and anterior chamber was quiet. Pupil was briskly reacting and lens was clear. Fundus examination was unremarkable. Based on the clinical picture a diagnosis of Infectious scleritis was made. Scraping from the base and margins of the ulcer were taken and sent for Gm Stain, KOH Stain and culture. During work up for fever, dengue serology revealed IgM positive, with NS1 antigen and IgG negative. Blood counts showed leucopenia (TLC 3900), with normal platelets counts (187000 per cu mm). The patient was empirically started on Oral Linezolid (600 mg BD) and Ciprofloxacin (500 mg BD) and topical Moxifloxacin and Tobramycin 2 hourly.

Gm Stain and wet KOH mount did not reveal any microorganism. Culture report after 48 hours showed growth of *Pseudomonas aeruginosa*. The organism was sensitive to ciprofloxacin, amikacin, piperacillin/tazobactam, ceftazidime and imipenem. Following culture sensitivity report Inj Amikacin 750 mg IV 24 hourly was given for 7 days. The patient was followed serially every day and showed improvement clinically. The ulcer healed completely after 96 hours and complete resolution of scleral lesion took 10 days.

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As per our knowledge this is the first reported case of infectious scleritis in a patient of Dengue fever.

RESULTS

Dengue is a mosquito borne illness common in Tropics which is caused by bite of infected *Aedes aegyptii*.

Ophthalmic manifestations in dengue fever are infrequent. Posterior segment involvement is more common and involves macular haemorrhage, macular oedema, optic neuropathy, vascular occlusion [1]. Commonest anterior segment involvement is sub conjunctival haemorrhage. Rare anterior segment complications reported include panophthalmitis [2], proptosis and globe rupture [3], necrotizing scleritis [4].

Most of these complications are seen 5-7 days after onset of symptoms and coincides with thrombocytopenic stage.

In the past, there have been few case reports of ocular infections in patients with dengue fever.

Platelet transfusion related panophthalmitis and endophthalmitis in 3 Patients with Dengue Hemorrhagic Fever has been recently reported [5]. No organism could be isolated in any of these cases and bacterial contaminants in the transfused platelets leading to endogenous spread was implicated in these cases.

The only reported case of panophthalmitis in which eventually evisceration had to be done, however no organism was found [2].

The only reported case of culture positive panophthalmitis caused by *Bacillus Cereus* in a dengue patient [6]. The direct entry of bacteria into the uveal and retinal circulation owing to disintegration of the endothelial cells caused by antibodies against NS 1 antigen has been postulated.

Infectious scleritis forms a lesser percentage of all cases of scleritis (5%-18%) but it is usually associated with devastating sight threatening complications. Bacterial etiology is common with *pseudomonas* being reported as commonest followed by *Staphylococcus*, *Nocardia*, *Mycobacterium*, *Streptococcus* and *Brucella* [7,8]. There is usually a preceding history of ocular surgery or trauma in most cases. The classical presentation is with a scleral nodule which could be multifocal or a scleral ulcer. Associated involvement of cornea, uvea or vitreous is usually seen and the visual acuity in most cases is poor at presentation.

In our case, the patient presented on 4th day of onset of fever with infectious scleritis. There was no history of ocular trauma. The patient was managed aggressively with systemic and topical antibiotics and showed good clinical response. The combination of Linezolid and ciprofloxacin was used as it has good activity against gram positive/gram negative organisms and good ocular penetration [9,10]. The early and appropriate institution of therapy in our case resulted in complete resolution of scleritis was observed in Figure 1.

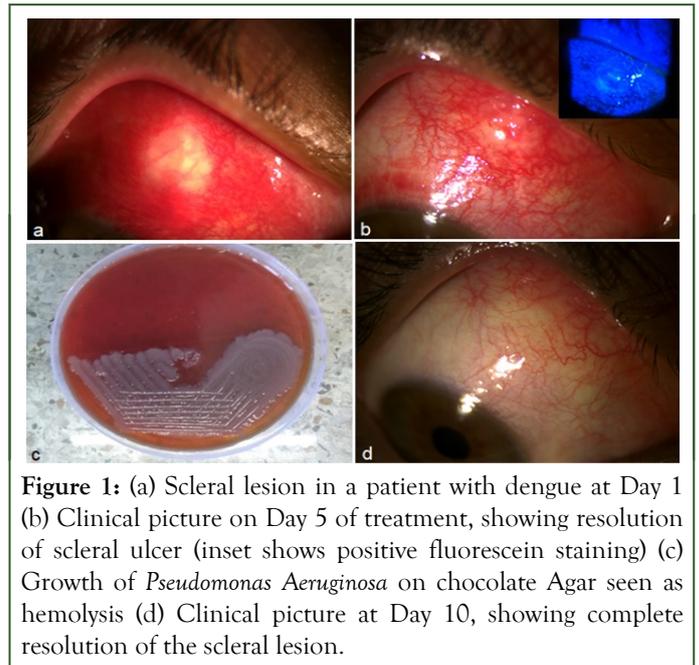


Figure 1: (a) Scleral lesion in a patient with dengue at Day 1 (b) Clinical picture on Day 5 of treatment, showing resolution of scleral ulcer (inset shows positive fluorescein staining) (c) Growth of *Pseudomonas Aeruginosa* on chocolate Agar seen as hemolysis (d) Clinical picture at Day 10, showing complete resolution of the scleral lesion.

DISCUSSION

There are some reported cases of ocular infections in dengue patients presenting with panophthalmitis/proptosis and having a fulminant course with poor response to treatment possibly owing to extensive ocular involvement. Most of these cases present early in course of disease and likely they don't have an immunological basis. Hence, they should be aggressively treated with intensive antimicrobial therapy and steroids should be withheld.

CONCLUSION

We report a favorable outcome in an otherwise dreaded and unreported complication of infectious scleritis in a dengue patient. A high degree of suspicion to look for scleral involvement and fundus examination is needed in a dengue patient presenting with acute onset pain and discharge.

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