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Infectious Scleritis- Two Different Clinical Presentation

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ABSTRACT

Aims: To present two different cases of infectious scleritis in a tertiary eye care centre of Bangladesh.

Method: An observational case series of two cases of infectious scleritis at Chittagong Eye Infirmary & Training Complex. Detail pertinent history was recorded, thorough clinical examination, best corrected visual acuity (BCVA), slit lamp examination, indirect ophthalmoscope were done. Fundus Fluorescein Angiography (FFA) and microbiology report obtained from first cases. Diagnosis was made by clinical history, ocular findings, appropriate ancillary tests and laboratory test.
Consent of the two patients was taken for academic purpose.

Result: Two patients presented with painful blurring of vision in affected eye. Male female ratio was 1:1. Both of them were at the age of 40 and had left eye affected with reduced vision less than 6/60. One had scleritis with exudative RD, other had anterior scleritis. One was pseudomonas and other was tuberculous. Both of them were treated with systemic antibiotic according to the infection along with systemic steroid.

Conclusion: Infectious Scleritis is a rare disease and it can cause loss of vision due to severe complication. But proper evaluation and in time proper treatment may save the eye with good vision.

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Introduction

The sclera is poorly vascularised connective tissue with diffuse cellularity, which some time subject to a variety of inflammatory diseases that dramatically alter its vascular pattern and cellularity [1,2].

Scleritis is an autoimmune condition involving inflammation of the sclera, scleral vessels and neighbouring tissues [1]. More than 40% of patients with scleritis have an associated autoimmune disease; however, a significant proportion of patients have no identifiable systemic cause for scleritis [1,2]. The pathogenesis of scleritis is thought to involve an infiltration of immune cells consisting of neutro-phils, macrophages, T and B cells, with local pro- inflammatory cytokine secretion.1Scleritis is a painful, often chronic, and potentially sight-threatening disorder [3,4].

According to the Watson classification system, scleritis may be divided into anterior and posterior types [2,3]. Anterior scleritis may be further subdivided into diffuse, nodular and necrotising types.

Eyes with scleritis may develop a wide range of secondary ocular complications such as scleral thinning, scleral perforation, corneal ulceration, anterior uveitis, raised intraocular pressure, cataract, exudative retinal detachment and optic disc oedema [2,3]. In particular, necrotising scleritis has been more frequently associated with ocular complications [3]. Although scleral disease does occur as an isolated condition, it is often a component of many multisystem connective tissue disorders which have an immunological basis [2,3].

A local injury to the eye in the form of a surgical operation of any sort has frequently been found to induce scleral inflammation [3,4].

Necrotizing anterior scleritis and posterior scleritis need to treat with systemic corticosteroids or with immunosuppressive drugs [5].

If the condition remains untreated, and sometimes even in spite of vigorous treatment, a gradual or rapid ulceration of the connective tissue matrix, if allowed to progress, may involve other ocular structures and lead to loss of vision [1,2].

Case I

A 40 years old male came with pain and blurred vision in left eye for 15 days at CEITC on 19th may 2010. On presentation ocular examination revealed best corrected visual acuity (BCVBA) of the right eye was 6/6 and hand movement in the left eye. Right eye was unremarkable, left eye was congested. The anterior sclera was visibly thickened with a cream coloured lump noticed at the nasal part of sclera (Figure 1). There was a slight aqueous flare, cells in the left eye and a few cells in the anterior vitreous. Fundoscopy revealed huge exudative retinal detachment in left eye while right retina was unremarkable. IOP was 10 and 04 mm of hg respectively in right and left eye.

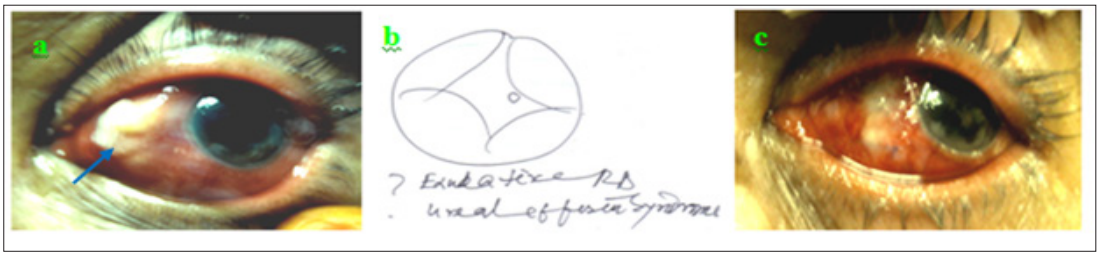
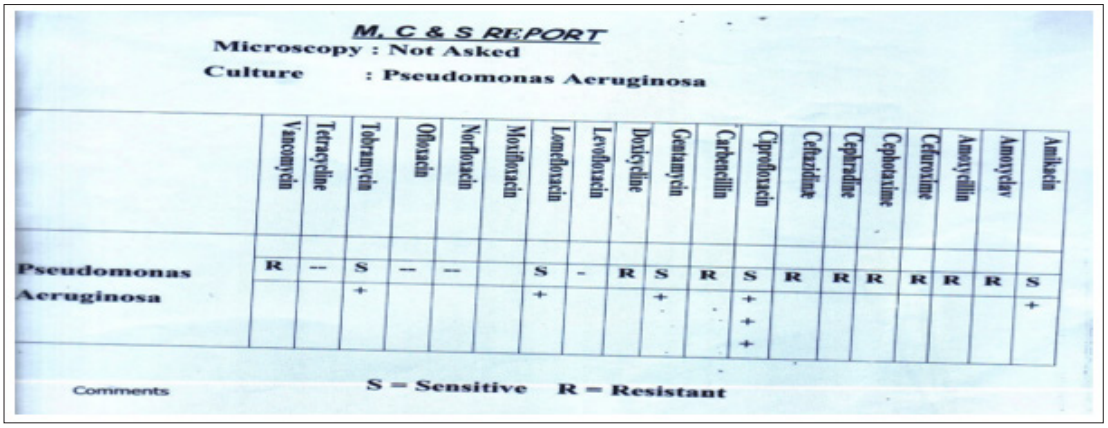


Figure 1: a) Left Yellow White Scleral Nodule with Pus Point (Abscess, Blue Arrow) Nasal to Limbus along with Diffuse Scleral, Episcleral Congestion b) Exudative Retinal Detachment c) After Surgical Dranage of Pus

His Hb was 11 gm/dl ESR (erythrocyte sedi mentation rate) 40 mm in first hour. TC WBC normal with neutrophill 75%, RBS - 94 mg /dl, Chest X-ray normal RA test negative VDRL non reactive, TPHA negative, Tuberculine test negative.

The abscess was drained and pus was sent for culture and sensitivity(C/S) test, report showed growth of Pseudomonas Aeruginosa sensitive to ciprofloxacin (Figure 2).



M. C & S REPORT

Microscopy : Not Asked

Culture : Pseudomonas Aeruginosa

	Vancomycin	Tetracycline	Tobramycin	Ofloxacin	Norfloxacin	Moxifloxacin	Lomefloxacin	Levofloxacin	Doxycycline	Gentamycin	Carbenicillin	Ciprofloxacin	Ceftazidime	Ceptriaxone	Cephotaxime	Ceftriaxone	Amoxycillin	Amoxyclav	Amikacin
Pseudomonas Aeruginosa	R	--	S +	--	--		S +	-	R	S +	R	S + + +	R	R	R	R	R	R	S +

Comments

S = Sensitive R = Resistant

Figure 2: C/S Report of Pus Showed Growth of Pseudomonas Aeruginosa Sensitive to Ciprofloxacin

Patient was diagnosed as Left scleritis due to Pseudomonus infection.

He was treated with systemic and frequent topical ciorofloxacin. Aditional systemic prednisolone 60 mg was give at morning daily for 7 days then taper by 10 mg. along with Cap. Omeprazole 20 mg twice daily and calcium supplement.

Topical cycloplegic three times hourly ciprofloxacine eye drop, prednisolone acetate eye drop 4 times, Ciprofloxacin eye ointment at night.

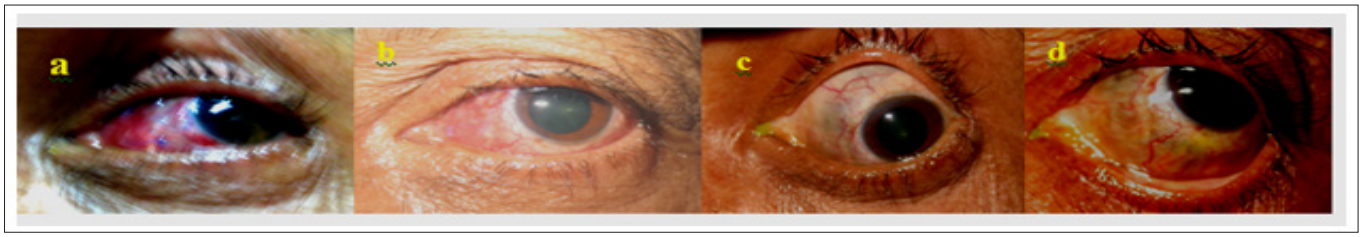


Figure 3: Gradual Resolvingo Scleral Inflammation from Left to Right After 15 days (a), 1 Month (b), 4 months (c,d) of Treatment

After antibiotic as well as steroid therapy patient was gradually improving (Figure 3a). After 15 days vision left eye improved from hand movement to counting fingers. Left scleral moderate congestion moderate anterior chamber reaction and resolving exudative retinal detachment.

After one month visual acuity left eye improved from counting fingers to 6/18. Remarkable resolution of left scleral congestion (3b), mild anterior chamber reaction and resolved retinal detachment, flat retina On FFA showed mild disc leakage (Figure 4).

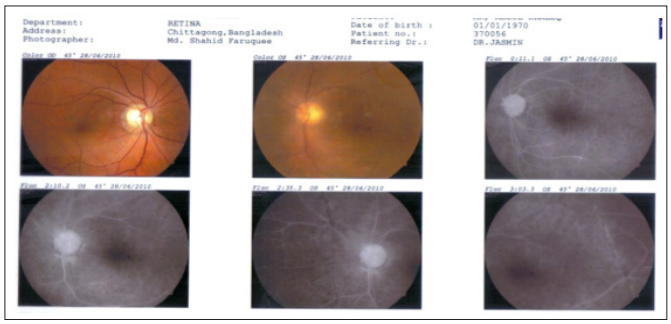


Figure 4: Color Fundus Photos Along with Fundus Fluorescent Angiogram of Left Eye Slight Hazy View, Mild Disc Leakage, Retina Attached After One Month of Therapy

After four months vision left eye improved from 6/18 to 6/9; healed left sclera with thinning (3 c,d), normal anterior chamber and retina.

Case II

A 40 years old female came with pain, redness and blurred vision in left eye for 07 days in this hospital on 19th April 2009. Her best corrected visual acuity in right eye 6/12 and visual acuity in left eye (VAL) 6/24.

Anterior segment of right eye is within normal limit. Left lid oedematous, conjunctiva was congested, two scleral ulceration involving the upper limbus and cornea with localized stromal infiltration present 9'0 clock to 1'0 clock position.

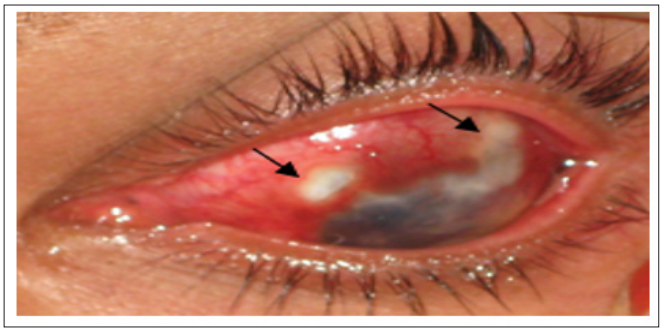


Figure 5: Two Left Scleral Ulceration (Black Arrows) At Superior Part Involving the Upper Limbus and Cornea with Localized Stromal Infiltration Present 9'0 clock to 1'0 Clock Position along with Surrounding Scleral Swelling and Inflammation

Her haemoglobin was 11gm/dl, ESR -36 mm in first hour, TC and DC within normal range, RBS was131 mg /dl, Chest X-ray normal RA test was negative VDRL non reactive, TPHA negative, Tuberculine was test was positive (Figure 6).

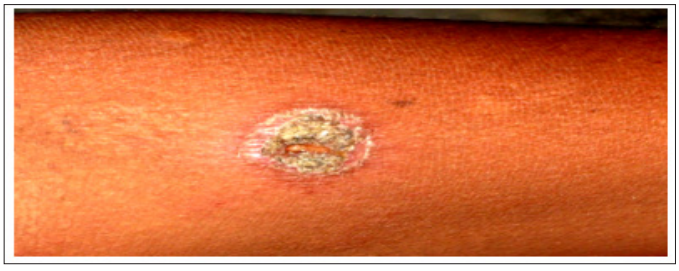


Figure 6: Tuberculin Test - Positive (30 mm at 48 hour) with Ulceration

Patient was diagnosed tubercular scleritis. Patient was referred to Physician for systemic TB treatment and opinion for treatment with systemic steroid for scleritis.

Histopathology report of Cervical lymph node showed granulomatous inflammation compatible with tuberculous lymphadenitis which made the diagnosis evidence based.

She was treated with Anti TB Therapy (ATT) comprising Tab. Rifampicin, Isoniazide combination (300mg) 2 tab. at morning daily for nine months, Tab. Pyrazinamide (500 mg) 3 tab. at morning daily for two months, Tab. Vitamin B1 one tablet at night daily for nine months. Along with ATT she was treated with systemic Prednisolone 60 mg at morning daily for seven days then taper by 10 mg along with Cap. Omeprazole 20 mg twice daily and calcium supplement.

Topical cycloplegic, Gatifloxacine, prednisolone acetate eye drop daily with Ciprofloxacin eye ointment at night was given.

After 2 weeks visual acuity of left (VAL) eye was 3/60 with pinhole 6/24. Ocular inflammation resolved remarkably with mild anterior chamber reaction.

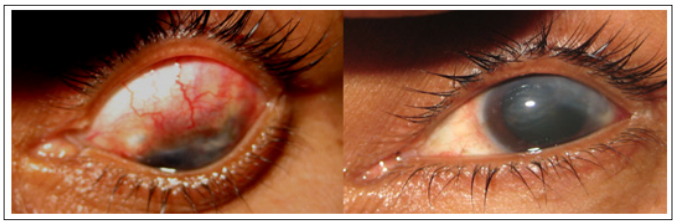


Figure 7: Two Weeks After Therapy Healing of Sclera-Corneal Ulcer Along with Resolution of Inflammation

After 1month VAL- 6/60 with pinhole 6/24.

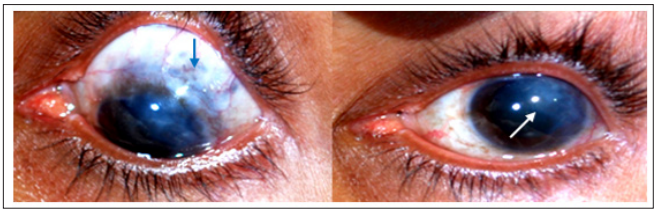


Figure 8: Six Weeks After Therapy Complete Healing of Sclero Corneal Ulcer Along Total Resolution of Sclero Corneal Inflammation. Scleral Thinning (Blue Arrow) and Corneal Scar (White Arrow) was Noted

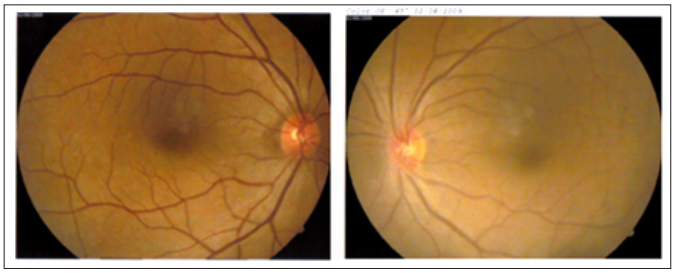


Figure 9: Normal Right and Left Retina. Left Retina Looks Slightly Hazy as the Corneal Haze

After 6 weeks of therapy complete healing of sclero corneal ulcer along total resolution of scleral inflammation (Figure 8), Thin blue sclera, corneal scarring with normal anterior chamber was noted. Retina revealed normal. (Figure 9) but vision remained 6/24.

Discussion

Infectious scleritis is relatively rare only 5% to 8% scleritis is due to infection [6].

Two forms of advanced infectious scleral inflammatory disease was reported here. Clinical presentation of infective scleritis are pain, redness, watering of involved eye [6]. This reported two cases were presented with similar complaints.

The diagnosis of scleritis was based on detailed clinical history, extensive review of systems, complete ophthalmologic examination, FFA, laboratory testing, culture/sensitivity test, histopathological examination of tissue according to the cases were perform when deemed necessary. Associated systemic disease was diagnosed based on the results of compatible history, clinical features and laboratory data. In our cases there was no association of systemic immunological disease.

Virus, bacteria, fungi, parasite all form of pathogenic microbes can cause infective scleritis, but the bacteria is reported as the most common etiological factor (53 to 100 %) [6]. Both of our reported cases were suffering from bacterial infection. Furthermore, Pseudomonus aeruginosa is the commonest one, Guerrero-Wooley et al. found it in 25% cases [6]. Our first case was suffered from Pseudomonus aeruginosa infection. Our second case was tuberculous but it is the least common (0.4%) case in Guerrero-Wooley et al reported series There was no history of trauma in our cases while 31% of cases of infective scleritis series had trauma reported by Guerrero-Wooley RL et al [6].

Topical and systemic broad spectrum antibiotics has been recommended, but there is no well stublished recommendation for infective scleritis [6]. All two patients of this report had active inflammation and therefore were treated with topical and/or systemic corticosteroids depending on the severity, location and chronicity of the inflammatory process, as well as the risk of visual loss and/or ocular complications. All two patients adequately respond to oral corticosteroid with systemic antibiotic in 1st and 2nd case. None of them showed corticosteroid adverse effects, recurrence of inflammation with corticosteroid tapering.

None of the cases showed associated systemic rheumatologic disease.

Second patient (with sclero corneal ulceration) had a positive tuberculine skin test (TST) and a cervical lymphadenopathy. This patients with tuberculous scleritis received four-drug anti-tuberculosis treatment as per current WHO guidelines [7]. This patient experienced improvement within two weeks, and eventually full resolution of scleritis after initiation of anti-tuberculosis treatment along with topical and systemic corticosteroids similarly Tubercular scleritis cases of H Keino [3].

H Keino, Tabbara showed that tuberculosis is an etiological agent of scleritis in some patients, particularly in eyes that present with localized elevated nodules of the sclera but our case was ulcerative one involved the upper cornea also [3,8].

The posterior segment complications of exudative retina etachment and optic disc oedema observed in 1st patient.

Posterior scleritis can occur on its own [9,10]. Exudative retinal detachment was observed in 77.8% of patients with posterior scleritis [3].

All our patients respond with systemic corticosteroid alone. As our cases were infective not purely immunological we did not need to use immunosuppressive agents, which is particularly used in patients with necrotising scleritis [3].

For necrotizing scleritis and posterior scleritis oral prednisolone was given 1mg /kg/day, approximately the dose is 60mg to 80 mg single morning dose, what we followed in our two cases [5].

Our second case of tuberculous necrotizing scleritis had peripheral corneal involvement as like Jabs DA et al l found marginal keratitis developed as a corneal complication in necrotizing scleritis (58.3%) [5].

Good visual acuity was maintained in first (6/9) but second case with tuberculous necrotising scleritis showed poor visual outcome 6/24 which is also similar to the findings of H Keino et al3. In our case it was due to corneal scarring.

Conclusion

Infective scleritis a rare inflammatory disease and it can cause loss of vision due to severe complication. But proper evaluation and in time proper treatment may save the eye with good vision.

Financial Disclosure

None reported.

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Ethical Issues

We took consent of the patients to share their reports for academic purpose.

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