

**Case Report**

**VARIED OCULAR COMPLICATIONS OF ENTERIC FEVER:  
A SERIES OF 9 CASES**

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**ABSTRACT**

Enteric fever is still endemic in developing countries like India mainly affecting the intestine, heart and joints, from the ocular standpoint conjunctivitis, metastatic uveitis, optic neuritis, retinal hemorrhage, accommodation paralysis, tenonitis, orbital cellulitis and even panophthalmitis have been mentioned as the complications of the disease. In this case series we aim to study various ocular complications of typhoid fever and their outcomes. We observed cases of mild uveitis responsive to topical steroids to severe intractable endophthalmitis and panophthalmitis with very poor visual prognosis. Relatively rare complications like macular hemorrhage, optic neuritis and retinal hemorrhages were also reported in the study. We conclude that conditions such as endophthalmitis and panophthalmitis caused by direct bacteriological invasion are usually refractory to treatment and bears very poor visual prognosis while the reactionary conditions are somewhat more responsive to treatment.

**Keywords:** *Enteric Fever*

**INTRODUCTION**

Typhoid fever is still endemic in developing countries like India it takes a heavy toll of manpower and occasionally even life. The prompt diagnosis and proper treatment of enteric fever seldom lead to any complication. Typhoid fever is caused by gram negative organism salmonella enterica either serovar typhi or serovar paratyphi. It affect human (who are reservoir) and is spread through consumption of contaminated food/ drink handled by people who shed the organisms from stool. Food with heavy contamination of approximately  $10^3$  to  $10^5$  cells is required to cause illness (Agarwal, 1963; Ballantyne and Michaelson, 1963).

Nevertheless, the disease is notorious for affecting the intestine, heart and joints. From the ocular standpoint conjunctivitis, metastatic uveitis, optic neuritis, retinal haemorrhages, accommodation paralysis, tenonitis, orbital cellulitis and even panophthalmitis have been mentioned as the complications of the disease (Agarwal, 1963; Ballantyne and Michaelson, 1963; Duke Elder, 1964; Duke Elder, 1967; Schupfer, 1967; Sorsby, 1968). During the last three years we have observed various ocular complications post typhoid fever. The rarity of the complication has prompted us to report them.

**CASES**

**Case 1**

A 35 years female came with acute in onset, painful diminishment of vision (DOV) in left eye (LE) since 20 days. She had History of (H/O) typhoid fever 6 weeks back, her widal was positive for “O” antigen in a titter of 1:320. On Slit Lamp Examination: Right eye (RE) was found to be clinically normal and lid edema, chemosis, ciliary congestion, mild cornea edema, Yellow fundal reflex was noted in LE (Figure 1), her vision was reduced to only perception of light in the involved eye. Her vitreous biopsy samples and aquas tap were positive for salmonella typhi. Patient was diagnosed as salmonella endophthalmitis and underwent pars plana vitrectomy. Patient not responded to medical and surgical treatment and ended up in pthysical eye.

**Case 2**

A 45 year female came with complains of (C/O) painful, gradual protrusion of RE since 4 weeks associated with loss of vision. Patient had H/O enteric fever 3 months back (widal  $>1:320$  for “O” and “H” antigen). Patient had no perception of light in involved eye. On examination patient had severe lid

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oedema with forward and downward proptosis, corneal infiltration and anterior chamber exudates are noted (Figure 2). Her vitreous biopsy sample was positive for salmonella typhi and was diagnosed as salmonella panophthalmitis. Response of systemic and intravitreal antibiotics was poor and ultimately patient had to undergo evisceration.

#### **Case 3**

A 50 year Female reported to our OPD with C/O pain, redness and blurring of vision in BE since 3 weeks. Patient had history of enteric fever 2 months back with positive serology. On examination her best corrected visual acuity is 6/18 and 6/24 by snellen's in RE and LE respectively. On slit-lamp examination she had keratic precipitates and 3+ cells and flare in anterior chamber. Routine Investigations were not indicative of any other etiology. Patient was diagnosed as acute iridocyclitis and put on topical steroids and cycloplegics. Response to treatment was good and patient had best corrected visual acuity (BCVA) of 6/6 in both eyes (BE) after 2 months.

#### **Case 4**

A 15 years old female was admitted with C/O redness, watering and painful DOV in LE (Figure 3) since 6 days. Patient had enteric fever about 15 days back and during the terminal phase of her illness she noticed pain and redness in her LE. On examination she had a peripheral corneal ulcer with thinning of about 3mm size with surrounding corneal Infiltration and oedema. Patient was put on topical antibiotics and atropine on follow up ulcer was healed with remaining corneal scar.

#### **Case 5**

A 16 yr female came with C/O DOV of BE since 1 week. She was diagnosed as enteric fever 1 month back (widal titer positive in a dilution of 1:320). On examination her BCVA was RE 6/24 and LE 6/60. Slit lamp examination shows mutton fat KP'S inferiorly on fundus examination patient had venous sheathing and active choroiditis patches in BE. Patient was diagnosed as panuveitis and was put on topical and systemic steroids.

#### **Case 6**

A 70 year male came with C/O sudden painless DOV in RE since 15 days. He had H/O leprotonomy for perforated intestinal ulcer due to typhoid fever 1 month back. On examination his BCVA was RE finger counting 1 ½mt. On slit lamp examination anterior segment was found to be normal. On Fundus examination patient had venous dilatation, soft exudates with superficial and deep hemorrhage in supero-temporal quadrant. Patient was diagnosed as a case of supero-temporal branch retinal vein occlusion. Patient was kept on follow and had stable vision.

#### **Case 7**

An 18 year male came with C/O sudden painless diminution of vision in BE since 14 days (Figure 4). The patient suffered from enteric fever 2 months back with positive serology (Widal positive in 1: 320 dilutions). His continuous fever had lasted for 40 days and during the convalescent phase of the disease he noticed painless blurring of vision in the both eye which was progressively deteriorating. On examination: Best corrected visual acuity in RE 6/12 and in LE 6/18. Anterior segments of BE were found to be normal. On fundus examination subhyaloid hemorrhage at macula in a boat shape was noticed in both eyes. Patient was kept on regular follow up and haemorrhage resolved with BCVA of 6/6 at 3 month follow up.

#### **Case 8 & 9**

Two patients 70 year and 56 year males came with C/O of sudden, painful and progressive unilateral loss of vision, with h/o of typhoid within past six months. On examination visual acuity is greatly reduced in the affected eye with relative afferent pathway defect. Anterior segment of both the patients were normal. Fundus shows hyperemic disc with blurred margins, with few exudates. Both patients were diagnosed as optic neuritis and treated with a course of intravenous methylprednisolone 1 gram for 3 days followed by oral steroid. Vision improved to pre-treatment level on follow up.

### **DISCUSSION**

Typhoid fever is an acute infectious disease capable of producing toxic and degenerative changes in the

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tissues throughout the body. Therefore, involvement of the eye is not surprising in this disease. Complications are usually seen after the third week which is notoriously called as the "Week of complications". There can be two possible modes of ocular involvement - firstly, through direct invasion of the ocular tissues by the bacteria and secondly, by way of allergic reaction, direct invasion manifests usually in the form of orbital cellulitis, panophthalmitis or corneal ulcers. In some circumstances, a low grade chronic inflammatory reaction may appear as uveitis papillitis, arteritis or retinitis (Schupfer, 1967). Conditions such as endophthalmitis and panophthalmitis caused by direct bacteriological invasion are usually refractory to treatment and bears very poor visual and anatomical prognosis while the reactionary conditions are somewhat more responsive to treatment if detected early (Sorsby, 1968). Therefore, the recognition of ocular complications of typhoid and its prompt management necessitates a close collaboration between a physician and an ophthalmologist.



**Figure 1: Salmonella Endophthalmitis**



**Figure 2: Panophthalmitis**



**Figure 3: Corneal Ulcer**



**Figure 4: Sub Hyaloid Macular Hemorrhage**

### **REFERENCES**

- Agarwal LP (1963).** *Eye Diseases*, (Kitab Mahal, Allahabad, India) 511.  
**Ballantyne AI and Michaelson IC (1963).** *Text Book of the Fundus of the Eye*, (Livingstone, London, UK) 275.  
**Duke Elder S (1964).** *Parsons' Diseases of the Eye*, 14th edition, (J. A. Churchill Ltd., London, UK) 550.  
**Duke Elder S (1967).** *System of Ophthalmology*, (Henry Kimpton, London, UK) X 532.  
**Schupfer B (1967).** *Oculist* 30 424, Cited by Duke Elder, S. - Ibid.  
**Sorsby A (1968).** *Modern Ophthalmology* (Butterworths, London, UK) II 105.