

## A CASE OF LEPTOSPIROSIS WITH OCULAR MANIFESTATIONS

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### ABSTRACT

*Leptospirosis, a zoonotic disease caused by the water-borne spirochete Leptospira. Although it is one of the world's most widespread febrile diseases, it remain underdiagnosed, mainly because of protean manifestations, lack of awareness, and nonavailability of laboratory support. Ocular manifestations are noted in the second phase of illness, but*

*these remain latent mainly because of the prolonged symptom-free period that separates the systemic manifestations from detection of ocular manifestations.*

A case of leptospirosis with ocular manifestations notably retinal haemorrhages, roth spot and accumulations of sub retinal fluid is presented here.

**Key words:** leptospirosis, eye manifestation, case report

### INTRODUCTION

*Leptospirosis, a zoonotic disease caused by the water-borne spirochete Leptospira. Although it is one of the world's most widespread febrile diseases, it remain underdiagnosed, mainly because of protean manifestations, lack of awareness, and nonavailability of laboratory support. The classical presentation of the disease is an acute biphasic febrile illness. Ocular manifestations are noted in the second phase of illness, but these remain latent mainly because of the prolonged symptom-free period that separates the systemic manifestations from detection of ocular manifestations.*

### CASE REPORT

A 23 year old female presented to the Emergency department with complaints of fever for the past one month, with sudden onset of diminished vision for one week. Investigations for fever done elsewhere revealed the following laboratory results: S.typhi and Leptospirosis positive; Hb- 4.8g%; she had received treatment with Packed cell transfusion for her anaemia and Ampicillin 500mg 6<sup>th</sup> hourly for 10 days. Clinical findings: On general examination patient was febrile and anaemic. Ophthalmic findings revealed visual acuity(Bedside vision) **RIGHT EYE:** 2/60 and **LEFT EYE :**2/60. Anterior segment :**RIGHT EYE-** Eyelids normal, Conjunctival Suffusion +, Cornea clear, AC normal, Pupil 3mm reacting to light(direct and consensual) Lens clear. **INTRA OCULAR PRESSURE** at 11 am (Applanation Tonometry) 14mmhg. **LEFT EYE-** Eyelids Normal, Conjunctival Suffusion +, Cornea clear, AC Normal, Pupil 3mm reacting to light(direct and consensual) Lens clear. **INTRA OCULAR PRESSURE** at 11am (Applanation Tonometry)16mmhg. Fundus: **RIGHT EYE-**Media clear, Disc size; shape; margins are normal, Venous dilatation+ Superficial haemorrhages+ Plenty of pre-retinal haemorrhages+ Roth spots+ Subretinal fluid + (Fig. 1) **LEFT EYE-** Media clear, Disc size;shape;margins are normal, Venous dilatation+ Superficial haemorrhages+ Plenty of pre-

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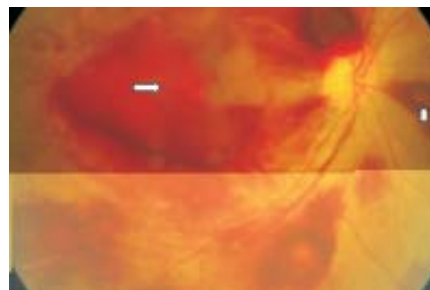
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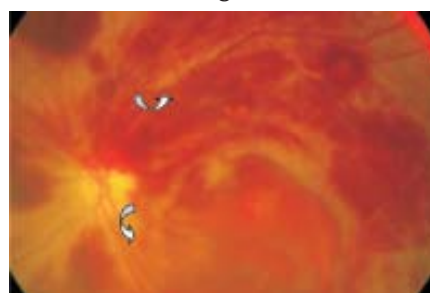
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Fig 1



↑ ROTH SPOT      ⇨ PRE-RETINAL HAEMORRHAGE

Fig 2



↪ VENOUS DILATATION      ↪ SPLINTER HAEMORRHAGES

retinal haemorrhages+ Roth spots+ Sub-hyaloid haemorrhages+ Subretinal fluid+(Fig. 2)

### INVESTIGATIONS

Hb-10.2g%(following PC transfusion) ESR – 59 mm/hr

PLATELETS – 39000cells/cu.mm

RBC – 3.26million/cu.mm

PT – 19.9, PTT – 38.4, INR – 1.61

BUN – 19, Cr – 0.6

LFT: TOTAL BILIRUBIN - 1.8

DIRECT BILIRUBIN - 0.6

SGPT - 1744

SGOT - 255

TOTAL PROTEINS - 6.7

ALBUMIN - 3.5

GLOBULIN - 3.5

ALKALINE PHOSPHATASE - 114

USG abdomen was normal.

IgM Titres for Leptospirosis was raised

QBC- MP was found to be Negative

**TREATMENT GIVEN**

Nil Ophthalmic intervention warranted, as the haemorrhages are said to resolve during course of time(1). Patient was advised regular follow up once in two weeks.

**DISCUSSION**

Leptospirosis is a world-wide disease with higher incidence and prevalence in the tropical and subtropical region. The natural reservoirs are rodents, domestic animals-livestock/dogs. Humans are accidental hosts and infection is due to contact with infected urine, tissue and water. Pathological leptospira belongs to the species *Leptospira interrogans*. The disease is often biphasic – early leptospiremic and late immune phase.

Weil's disease is a severe form associated with jaundice, hepatosplenomegaly, azotemia, haemorrhages, anaemia, persistent fever, and altered mental status. Autoimmunity is believed to be the underlying pathogenic mechanism in ocular pathogenesis(2). All forms of leptospira can damage the wall of small blood vessels; this damage leads to vasculitis with leakage and extravasation of cells, including haemorrhages. It causes direct cell death and toxicity(3). After 4 to 7 days of the initial bacteremia the leptospira are eliminated by the immune system from all host tissues except from immunologically privileged places like the brain/eyes resulting in immunological pathology in the eyes like uveitis(2days to 4weeks)(4). Ocular involvement occurs during the immunological phase typically with panuveitis often accompanied with retinal periphlebitis and hypopyon.(5)

Ocular complications occur from 2weeks to 6months after the febrile stage and can lead to decrease in vision and blindness. Manifestations include congestion, subconjunctival haemorrhage, icterus, iridocyclitis in the anterior segment.

Posterior segment manifestations are: vitritis, pars planitis, periphlebitis, choroiditis, papillitis, macular edema, retinal haemorrhages, retinal exudates, and arteritis. Two recent studies(6&7) from South India have identified non-granulomatous uveitis hypopyon, cataract, vitreous inflammatory reaction, retinal vasculitis and papillitis as more common ocular manifestations. Retinal vasculitis was seen in 4-8% to 51% of patients with leptospiral uveitis. (8) Venous involvement is more common and only 1% of them had arteritis. Retinal vasculitis is of the perivasculitis type.

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