Leptospiral Uveitis

JM Koshy*, J Koshy**, M John***, V Loomba*, D Deodhar*

Abstract
Leptospirosis is widely regarded as the most widespread zoonosis in the world. Systemic leptospirosis is a biphasic illness. Ocular involvement in leptospirosis has been reported to be extremely variable, ranging from 2% to 90%. Ocular involvement is seen both in the systemic bacteraemic phase as well as in the immunological phase. Leptospiral uveitis is a common entity in the tropical countries. However it remains underdiagnosed mainly because ocular manifestations are noted in the second phase of illness. The primary anatomical location of inflammation is either in the anterior segment or pan uveitis. We report the case of a 40 year old lady who had presented to us with leptospiral uveitis.

Introduction
Leptospirosis is a spirochaetal disease. Leptospiral uveitis is a common entity in the tropical countries. However it remains underdiagnosed mainly because ocular manifestations are noted in the second phase of illness. There is a prolonged symptom free period that separates the systemic manifestations from detection of ocular manifestations. We report the case of a 40 year old lady who had presented to us with leptospiral uveitis.

Case Report
A 40 year old lady from Punjab in India had presented to us with fever for 15 days and cough for 10 days. There was no history of yellowish discolouration of sclera, vomiting, or bleeding from any site. She did not complain of loose stools or dysuria. She did not have altered sensorium or history suggestive of any neurological focal deficit.

On clinical examination the pulse was 108/minute and blood pressure was 90/60 mm of Hg. Systemic examination was unremarkable. She was further evaluated for the cause of fever. Haemogram and biochemistry parameters were normal (Table 1). Malarial parasite was not detected in the blood film and the antigen testing done for malaria also was negative. Blood culture was sterile. Widal and scrub typhus serology also was negative. Leptospira IgM (immunoglobulin M) antibodies were detected by sandwich immunoassay. She was initiated on doxycycline to which she responded.

While in the hospital she was noticed to have circumcorneal congestion in both the eyes. On reviewing the history she had noticed redness of eyes for 15 days.

Slit lamp examination revealed acute non granulomatous pan uveitis with optic disc oedema, peripapillary tortuosity (Figure 1) membranous vitreous opacities with absence of choroiditis and retinitis. These findings were suggestive of leptospiral uveitis. She was initiated on cycloplegics and steroid eye drops. On follow up her findings had resolved completely by 2 months (Figure 2).

Discussion
Leptospirosis is widely regarded as the most widespread zoonosis in the world. Leptospira are highly motile, obligate aerobic spirochaetes. They enter the humans through an intact mucosa or abraded skin, resulting in a bacteraemia, disseminating into various organs such as the kidneys, liver, lungs, heart and the central nervous system.
The classical description of systemic leptospirosis includes a biphasic febrile illness and a less common fulminant or icterohaemorrhagic form observed in 5% to 10% cases. In the biphasic disease, the initial septicaemia phase is characterised by bacteraemia that typically lasts about 1 week. Most of the recognised cases of leptospirosis present with a febrile illness characterised by an abrupt onset of high fever, headache, severe myalgia, chills and rigors, nausea, vomiting and anorexia. This presentation may mimic malaria, dengue or other viral haemorrhagic fever.

Ocular involvement in leptospirosis has been reported to be extremely variable, ranging from 2% to 90%. Ocular involvement is seen both in the systemic bacteraemic phase as well as in the immunological phase. Ocular manifestations may be subclinical as to be overlooked and is usually found in cases where it is searched for as in this case. During this stage one may also see conjunctival congestion which may be present without any conjunctival discharge, chemosis or sub conjunctival haemorrhage.

Leptospiral uveitis was first reported by Weil in 1886 in his original article and subsequently, several authors found its varying presentation. It may occur as single, self-limited or recurrent episodes. Bilateral and unilateral presentations are found to be equally prevalent. The primary anatomical location of inflammation is either in the anterior segment or panuveitis involving both the anterior and posterior segments of the eye. The study of the causes of uveitis at a tertiary care centre in South India implicated infections in 31% cases, of which leptospirosis was the identified cause in 205 of all infections and 6% of all cases of uveitis.

Martin et al noted high incidence of additional ocular signs in the acute phase of leptospirosis including optic disc oedema, retinal vasculitis, retinal haemorrhages and hard exudates. None of these patients with leptospirosis had uveitis in the systemic phase. However in this case it was noticed during the systemic phase.

Differential diagnosis would include other non-granulomatous uveitis associated with ankylosing spondylitis and Behcet’s syndrome. Both of them can present as non-granulomatous hypopyon uveitis. However Leptospiral uveitis is typically acute and non-granulomatous, and tends to be either anterior and mild or diffuse and severe. Systemic history can help differentiate these disorders. Moreover they are chronic as against the acute presentation in leptospirosis. Disc oedema, vitreal reaction and vasculitis can mimic sarcoidosis. However sarcoidosis presents as a chronic granulomatous uveitis.

### Conclusion

Even though Leptospiral uveitis is a common entity it is under diagnosed as the patients would be attended by a physician during the systemic illness and subclinical or less obvious symptoms would be overlooked by the physician. Hence, an increased awareness among the physicians regarding this entity is required as a timely ophthalmic evaluation would change the management of the patients. Ophthalmic examination should be included in the evaluation of patients with leptospirosis.

### References