SUMMARY AND CONCLUSION
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The present study was undertaken to evaluate the ocular lesions in tuberculous meningitis of paediatric patients in Bundelkhand region, to decide the prognosis of disease and to prevent the dreading sequelae of blindness by early detection of complications and their management. The study was carried out in the Department of Ophthalmology in active collaboration with the department of Paediatrics, I.L.B. Medical College, Jhansi, over a period of 11 months from July 1983 to May, 1984. 63 children up to the age of 13 years, suffering from tuberculous meningitis (TBM) were selected for this study. These children admitted to the paediatric ward of I.L.B. Medical College, Jhansi belonged to Jhansi district and nearby districts of Uttar Pradesh and Madhya Pradesh forming the Bundelkhand Region. A detailed clinical examination was carried out. Due importance was given to obtain the history of contact, to record B.C.G. vaccination and to evaluate nutritional status by dietary history and weight of the child. The socioeconomic status of the patient and history of preceding illness was also noted in each case. A detailed ocular examination was carried out in each case with the help of Binocular loupe, bright torch light and Keeler's Direct ophthalmoscope. The various ocular problems were managed & followed up during hospital stay and after discharge from the hospital.
Ocular manifestations observed in cases of T.B. were mainly in the form of cranial nerve palsies, various pupillary abnormalities and fundoscopic lesions. The various fundoscopic lesions were papilloedema, papillitis, opticoatrophy, bitemporal pallor and pale disc. Anterior segment lesions in the form of conjunctivitis and corneal ulcer were noted in very few cases.

Most of the patients having ocular problems were relieved with cortisones therapy (given by oral, intramuscular intravenous and retrobulbar routes depending on the condition) vasodilators, hyperosmolar agents and neurotonics, along with antitubercular treatment as adjuvant to the therapy.

In the light of present work following points summarizes the salient features of our study.

1. Majority of cases of T.B. in our study belonged to preschool children group. The prevalence rate was 80.95% in 0-4 years age group.

2. There was preponderance of male cases over female ones.

3. Out of 63 cases ocular involvement was seen in 54 cases (85.71%) while 9 cases showed no ocular problem.

4. The mortality in this series was 25.39%. It was interesting to note that all the cases which expired were having ocular problems.

5. It was observed that mortality and morbidity was highest if the child was malnourished, belonged to low socioeconomic status, in stage III & IV of disease and died within less than 1 month.
6. Anterior segment lesions were seen only in 7.93% cases. All cases recovered after giving treatment.

7. Cranial nerve involvement was seen in 42.85% cases. The distribution of various cranial nerve involvement and follow up results were as.

(I) Facial - It was involved in 19.4% cases all cases were unilaterally involved. Majority of cases got relieved. Mortality was 30%.

(II) Oculomotor nerve - Incidence was 12.69%. The involvement was mostly unilateral. Mortality was 14.29%, while majority of cases recovered.

(III) Abducent - It was involved in 11.11% cases. Majority of cases had unilateral involvement and showed marked recovery. Mortality was 28.57%.

8. Pupillary abnormalities - The prevalence was 63.82%.

Pupillary abnormality was observed in two forms -

(I) Dilated & Fixed - It was seen in 41.26% cases.

Majority of the cases had bilateral involvement. Mortality seen in this abnormality was 43.47%. Out of total followed cases, 30.43% recovered & 26.08% remained same.

(II) Moderately dilated with sluggish reaction was observed in 26.98% cases. Out of total followed up cases 13.33% expired 60% recovered and 26.66 remained same. In this group also there was bilateral involvement in most of the cases.
9. Fundoscopic lesions - These were seen in 80.95% cases.

The various lesions & their follow up results were as:

(I) Papilloedema - It was seen in 25.39% cases majority of cases showed bilateral involvement. Out of total followed up cases 50% expired, 31.25% recovered and 18.75% cases progressed to optic atrophy. Out of the cases which progressed to optic atrophy, 12.5% did not recover whereas 6.25% cases recovered.

(II) Postnecrotic atrophy - It was seen in 25.39% cases mostly bilaterally. Out of total followed up cases, 35.71% expired, 42.85% recovered and 21.42% remained same.

(III) Primary optic atrophy - It was observed in 6.34% cases, out of total followed up cases 66.66% remained same and 33.33% improved.

(IV) Papillitis - It was observed in 19.05% cases mostly bilaterally. Among total followed cases 27.27% expired, 63.63% recovered 9.09% cases progressed to optic atrophy.

(V) Bilateral pallor - It was seen only in 3.17% cases. Out of 2 cases 1 progressed to optic atrophy & one recovered.

(VI) Pale disc - It was seen only in one case (1.58%) which later on recovered.
Conclusions

Cranial nerves were involved because they are situated at the base of brain & are affected in the tuberculous meningitis due to infiltration of exudates. Majority of these nerves recovered as the disease is controlled. Papillary changes were mainly due to fundus changes mainly papillitis and optic atrophy as well as due to cerebral irritation. As the fundus lesions improved, pupillary changes also reversed. In follow up study of various ocular lesion papillitis showed best recovery in comparison with others. Papilloedema showed high mortality, thereby showing a grave prognosis, whereas remaining cases which survived recovered by hyperosmolar agents. Similarly few cases of post neuritic atrophy & primary atrophy also recovered by judicious therapy. Thus the therapeutic regimen adopted helped in the management of various ocular lesions. Thus we can conclude that we can prevent various dreading ocular sequelae in TM by early detection & judicious therapy.