Adjunctive thalidomide therapy for refractory TB meningoencephalitis

고려대학교 의과대학 내과학교실[1]

이우주[1], 김선빈[1]

Introduction: Thalidomide, an anti-inflammatory and immunomodulatory drug, may be useful in refractory CNS TB with severe paradoxical reactions. We present a case of TB meningoencephalitis , whose neurological impairments worsened while taking steroids and anti-TB medication, but improved with thalidomide.

Case: A 42-year-old man visited the ER with confusion. He had no disease history. He presented with high fever, neck stiffness, and cervical lymphadenopathy. Lab findings revealed a raised CSF protein and low glucose with lymphocytosis. MRI showed several unidentified bright objects in the cerebral white matter(Figure 1A). Neck CT showed multiple enlarged lymph nodes with necrotic changes, suggestive of TB lymphadenitis (Figure 2). Cervical lymph-node biopsy revealed necrotizing granulomatous inflammation with positive AFB staining. TB meningitis was confirmed by CSF AFB culture. IV dexamethasone was scheduled and anti-TB medications (HERZ) were started. After 1 month, he complained of visual disturbance. Since it was difficult to exclude optic neuropathy due to ethambutol, it was changed to moxifloxacin. Brain MRI after three months showed newly developed diffuse leptomeningeal enhancement(Figure 1B). It was difficult to exclude optic neuropathy due to isoniazid; therefore, isoniazid was changed to amikacin. IV dexamethasone was restarted, and low-dose steroids were maintained to prevent the progression of the multiple tuberculomas. Brain MRI after 4 months revealed an increased number of tuberculomas and perilesional edema (Figure 1C). The anti-TB medication was switched to cycloserine and prothionamide, and thalidomide with re-scheduled high-dose steroids was added as an immunomodulatory agent. Brain MRI after 6 months showed decreased diffuse leptomeningeal enhancement(Figure 1D). He was discharged with anti-TB medication and thalidomide after 6 months and is being treated in an outpatient clinic.

Conclusion: TB meningoencephalitis is a fatal disease that can worsen paradoxical reactions despite anti-inflammatory agents. The immune-modulatory effects of thalidomide may be crucial in refractory TB meningoencephalitis with multiple tuberculomas.

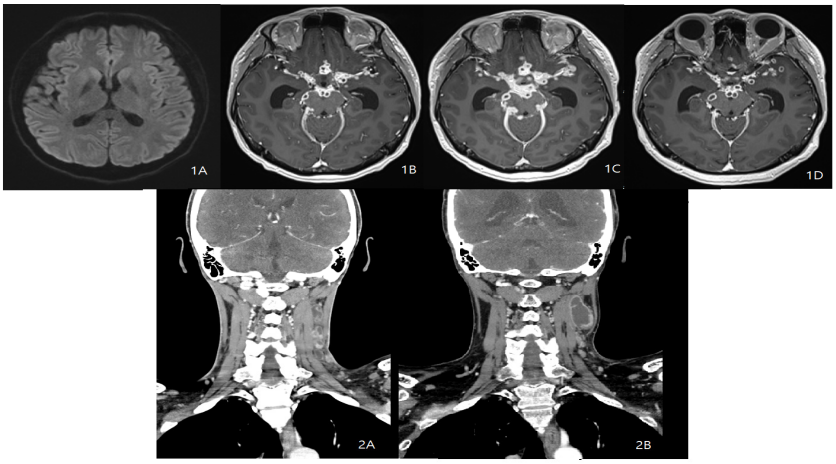

Figure 1 : The serial Brain MRI Diffusion(1A) and Cranial Nerve(CE) (1B,1C,1D) on Admission day(1A), and after 3 month(1B), after 4 month (1C), and after 6 month(1D). 1D showed dramatic decrease of TB lesion of Brain, after thalidomide, and steroid were added.

Figure 2 : The serial Neck CT(CE) (2A) on admission, and after 3 months (2B), showed inverval aggravation of TB lymphadenitis. Between the period, TB medications, not thalidomide, were administered.

glucose	34(Blood glucose 126)
Protein	293.9 mg/dL
cell count WBC	320
cell count neutrophil	188/μL
cell count lymphocyte	94%
cell count RBC	<10
cell count monocyte	5%
TB PCR	negative
NTM PCR	negative
Culture	negative

Table 1: CSF study at emergency room on visited day.