Novel Cord-like Structures on MRI in a Case of Hypervirulent *Klebsiella pneumoniae*

Keiji Takahashi¹, Atsushi Miura¹, Tetsuo Yamaguchi²,³ and Masayuki Kanematsu⁴

Key words: MRI, cord-like structure, meningitis, *Klebsiella pneumoniae*, hypervirulent, arachnoid trabeculae

(DOI: 10.2169/internalmedicine.54.3485)

An 89-year-old Japanese man was referred to our hospital with a high fever, headache and convulsions. His consciousness level was GCS8 (E2V1M5), without paralysis. Biochemical data revealed a WBC count of 4,350/μL (Seg: 94.7%) with a platelet count of 85,000/μL and C-reactive protein (CRP) level of 20.8 mg/dL. An examination of the...
cerebrospinal fluid showed a turbid appearance with countless WBCs, a protein level of 375 mg/dL and a glucose level of <50 mg/dL (blood glucose: 124 mg/dL). These data suggested the presence of bacterial meningitis. On fluid-attenuated inversion-recovery (FLAIR) MR images, most regions of the cerebral sulci were obscured, likely due to the existence of inflammatory exudates involving the cerebral sulci and leptomeninges (Picture B, dotted arrow; Picture A, 3 months earlier) (1). Multiple irregular cord-like structures hyperintense relative to the cerebrospinal fluid bridged the dura and the pia mater throughout the subarachnoid space (Picture B-D, broken arrow). The patient died on the fifth hospital day, and *Klebsiella pneumoniae* was subsequently isolated from cerebrospinal fluid and blood cultures. The virulence genes, including *magA* and *rmpA*, were detected using a polymerase chain reaction assay, which indicated that the isolate was a hypervirulent clone (2). Significant inflammation may have affected the arachnoid trabeculae, which connect the arachnoid and the pia mater, with the vessels becoming swollen, thus resulting in the detection of cord-like structures in the subarachnoid space. This is the first report of MR images showing cord-like structures in the subarachnoid space.

The authors state that they have no Conflict of Interest (COI).

References
