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Bing-Neel Syndrome: A Rare Mimic of Secondary Normal Pressure Hydrocephalus

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An 80-year-old male, in remission from Waldenström's macroglobulinemia (WM), presented with 6-months of cognitive decline, broad-based shuffling gait, and nocturia. Serial CT head demonstrated progressive ventriculomegaly. MRI revealed abnormal FLAIR signal in the lateral ventricles with fluid-fluid levels and in peripheral sulci/basal cisterns. Pachymeningeal thickening/enhancement was noted at the frontal dura, cavernous sinus, and Meckel's caves (Figure 1). Spinal MRI revealed enhancement along the thoracic spinal cord/conus with a thickened cauda equina. Highly proteinaceous CSF (7.01g/L) formed a jelly-like precipitate moments after lumbar puncture (Video 1). CSF WBC was $27 \times 10^6/L$ (92% lymphocyte) and flow cytometric analysis confirmed recurrent CNS WM (Bing-Neel syndrome)^{1,2}.

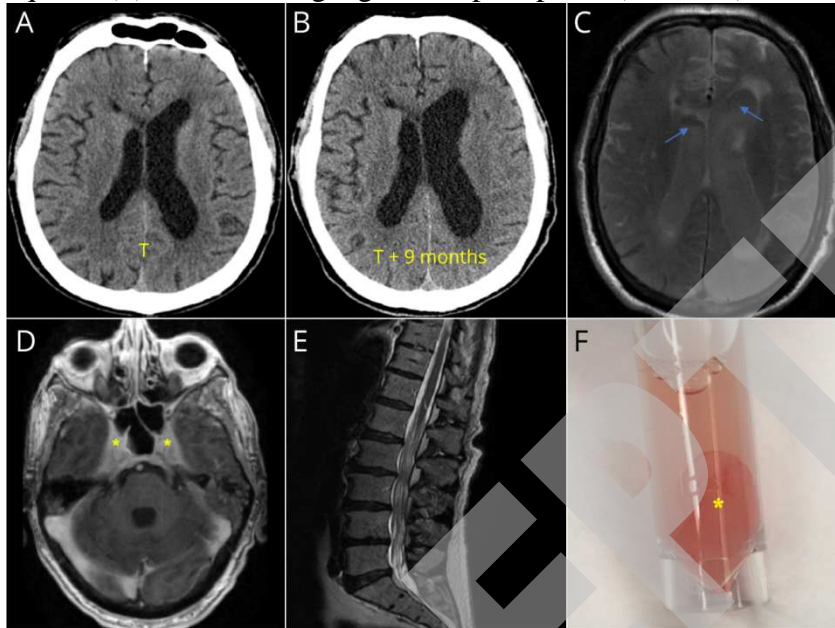
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Figure Legend:

Figure 1: (A, B) CT demonstrating progressive ventriculomegaly. (C) FLAIR MRI with hyperintensity within the subarachnoid spaces and fluid-fluid levels (arrows) within the lateral ventricles. (D) Contrast-enhanced T1 MRI demonstrating cavernous sinus thickening/enhancement (asterisks). (E) T2-weighted MRI demonstrating thickening of the cauda equina. (F) CSF showing a globular precipitate (asterisks).



Video 1: Video of solid precipitate forming out of the CSF moments after the lumbar puncture.

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