Rheumatoid-associated meningitis and vasculopathy

Figure 1 Imaging abnormalities of meningitis and small vessel disease

(A) Abnormal contrast enhancement of bilateral paramedian meninges. (B) T2 fluid-attenuated inversion recovery parafalcine hyperintensities. (C, D) Angiography with vascular narrowing and delayed flow in distal anterior cerebral artery branches (arrows).

A 63-year-old woman with a 9-year history of rheumatoid arthritis presented with headaches and paraparesis. Neuroimaging showed abnormal enhancement and arterial narrowing (figure 1), suggestive of vasculitis. Despite treatment with corticosteroids and cyclophosphamide, her symptoms persisted 7 months, and meningeal biopsy was performed. Biopsy showed palisading necrotizing-granulomatous meningitis with lymphoplasmacytic infiltration of small vessels (figure 2). ANCA (antineutrophil cytoplasmic antibodies) serology and IgG4 immunohistochemistry were negative. Special stains and cultures were negative for bacterial, spirochete, acid fast, and fungal organisms, consistent with rheumatoid-associated CNS disease. CNS involvement by rheumatoid arthritis is rare, usually manifesting as rheumatoid nodules in pachymeninges; leptomeningeal involvement is even more unusual.¹

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(A) Thickened yellow-white leptomeninges in situ. (B) Microscopy of sulcus with palisading macrophages around expansive central necrosis (*) surrounded by dense lymphoplasmacytic leptomeningeal infiltrate (hematoxylin & eosin). (C) Multinucleated giant cells surrounding necrosis (*) (hematoxylin & eosin). (D) Lymphoplasmacytic inflammation disrupting small vessels (trichrome stain).

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