24-28 Ottobre 2025
Padova Congress
55° CONGRESSO SOCIETÀ ITALIANA DI NEUROLOGIA

UNIVERSITÀ di VERONA
Dipartimento di NEUROSCIENZE, BIOMEDICINA E MOVIMENTO
Azienda Ospedaliera Universitaria Integrata Verona

Recurrent Rheumatoid Meningitis: An Uncommon Stroke Mimic

Sophia D.M. Camerer[1], A. Scartezzini[2], M. Scarpelli[2], S. Ottaviani[3], B. Bonetti[2]

[1] Dipartimento di Neuroscienze, Biomedicina e Movimento - Università degli Studi di Verona – Verona, [2] Neurologia A - Stroke Unit - AOUI Verona – Verona, [3] Neurologia - P. Pederzoli Hospital - Peschiera del Garda

Background:
Rheumatoid meningitis (RM) is a rare, underrecognized cause of stroke-like episodes. RM can manifest in patients with rheumatoid arthritis (RA) even without active joint disease, posing challenges for differential diagnosis, especially in emergency settings. We hereby discuss a case of relapsing stroke-like aseptic pachy-leptomeningitis with history of RA.

Case Presentation:
An 83-year-old woman with a 40-year history of untreated, clinically silent RA was admitted to our Stroke Unit (SU) for sudden-onset left hemiparesis, hemineglect, and homonymous hemianopsia (NIHSS 17). Brain CT and CT angiography were unremarkable. Suspecting an ischemic stroke, she was treated with intravenous (iv) thrombolysis using recombinant tissue plasminogen activator (rt-PA). As her symptoms progressed, a brain MRI was performed, revealing diffuse pachy-leptomeningeal enhancement over the entire right hemisphere, without ischemic lesions (Fig.1), suggesting an aseptic meningitis linked to her silent RA. She was treated with high-dose steroids, achieving complete clinical and radiological recovery (Fig.2).

One year later, she was admitted again with sudden-onset left hemiparesis, hemineglect, and homonymous hemianopsia (NIHSS 5). At presentation, she also had newly detected atrial fibrillation. Brain CT and CT angiography were unremarkable. Following current guidelines, iv rt-PA was administered again and she was admitted to the SU.

During hospitalization, her condition worsened in few days (NIHSS 14), with progression to left hemiplegia, hemineglect, and tonic right gaze deviation, accompanied by headache. Repeat brain CT remained negative for ischemic or hemorrhagic lesions but showed persistent right frontoparietal swelling.

Lumbar puncture revealed mild pleocytosis, elevated protein, blood-brain barrier disruption and low intrathecal synthesis, with negative microbiology and cytology. Rheumatoid factor (RF) and anti-cyclic citrullinated peptide antibodies (ACPA) were markedly elevated. Brain MRI showed right fronto-opercular hyperintensity and cortical convexity enhancement (Fig.3) —consistent with recurrent RM.

High-dose iv methylprednisolone (1 g daily for 5 days) was administered with tapering, leading to complete recovery. At three-month follow-up, she was asymptomatic and is scheduled to begin rituximab for long-term control.

Discussion:
This case illustrates the importance of considering RM as a differential diagnosis in patients presenting with stroke-like episodes, particularly those with a history of RA. Notably, our patient had no active joint symptoms for decades, confirming that RM can be the sole manifestation of RA (AR sine arthritis) and may recur even without systemic disease activity (Schuster et al. 2018; Angeloni et al. 2022; Joshi et al. 2020). However, the markedly elevated ACPA and RF levels strongly supported the autoimmune nature of the illness. Brain MRI and CSF analysis were crucial to exclude alternative causes, such as infections or malignancies.

Another significant aspect is that our patient underwent the administration of systemic thrombolysis in two separate RM-related stroke-like episodes. To our knowledge, only one prior report (Akamatsu et al. 2018) described thrombolysis in this context. In both cases, our patient had no hemorrhagic complications, suggesting that thrombolysis may be safely performed in carefully selected RM patients with stroke-like presentations.

The prompt and complete recovery after corticosteroid treatment in both episodes is consistent with the steroid-responsiveness of RM, reported in literature (Schuster et al. 2018; Serra Smith et al. 2024). Our experience reinforces that RM can be the sole manifestation of RA and may recur despite apparent systemic remission, and should be held in high clinical suspicion to ensure early immunosuppressive treatment and avoid misdiagnosis.

Conclusion:
This case highlights the need to consider RM among stroke mimics, even in patients with silent RA. Elevated ACPA and RF titers can be of support in diagnosis workup, while MRI and CSF analysis are essential to exclude alternative causes. Notably, our patient safely underwent thrombolysis twice without complications, suggesting, although data are scarce, it may be safe in selected patients. Early recognition and early high-dose corticosteroids are crucial for favorable outcomes.

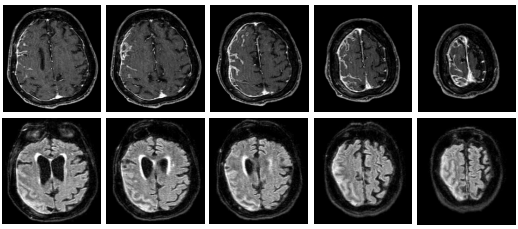

Fig.1- MRI 10.06.2024 (before steroids); (above) T1 + mdc; (under) T2

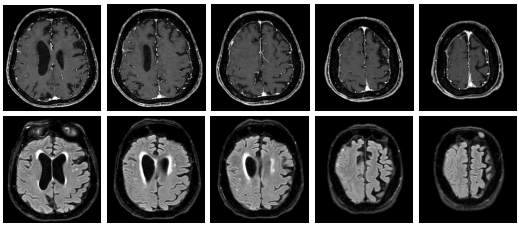

Fig.2- MRI 04.11.2024 (after steroids); T1 + mdc (above); T2 (under)

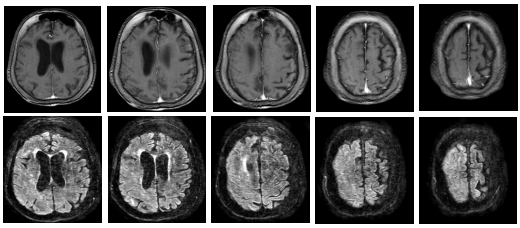

Fig.3- MRI 23.04.2025 (after steroids); T1 + mdc (above); T2 (under)