



# Neuropathological Correlates of MRI-Visible Small Vessel Disease Lesions

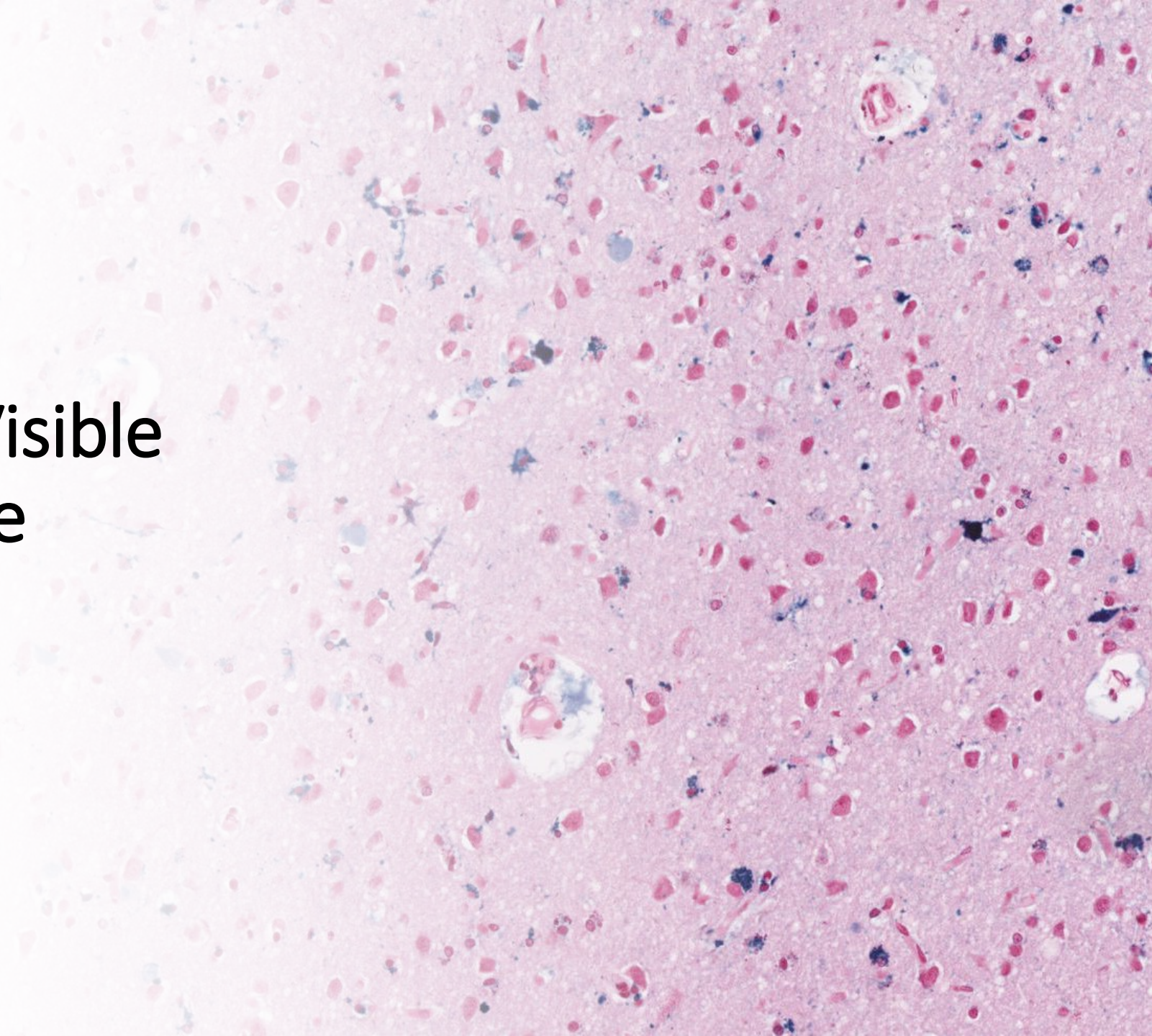
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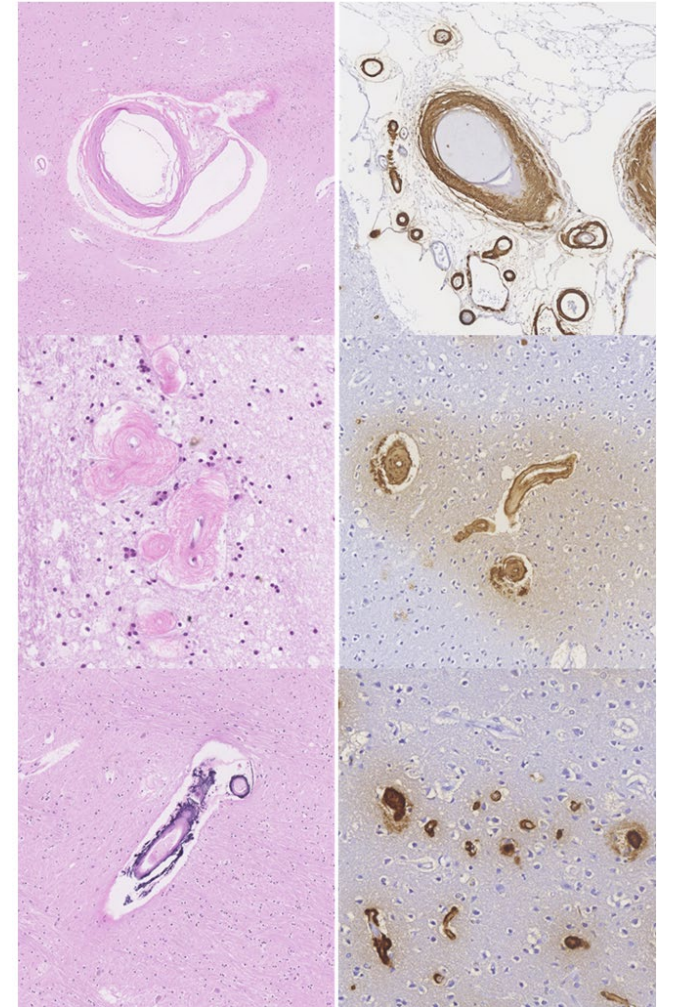
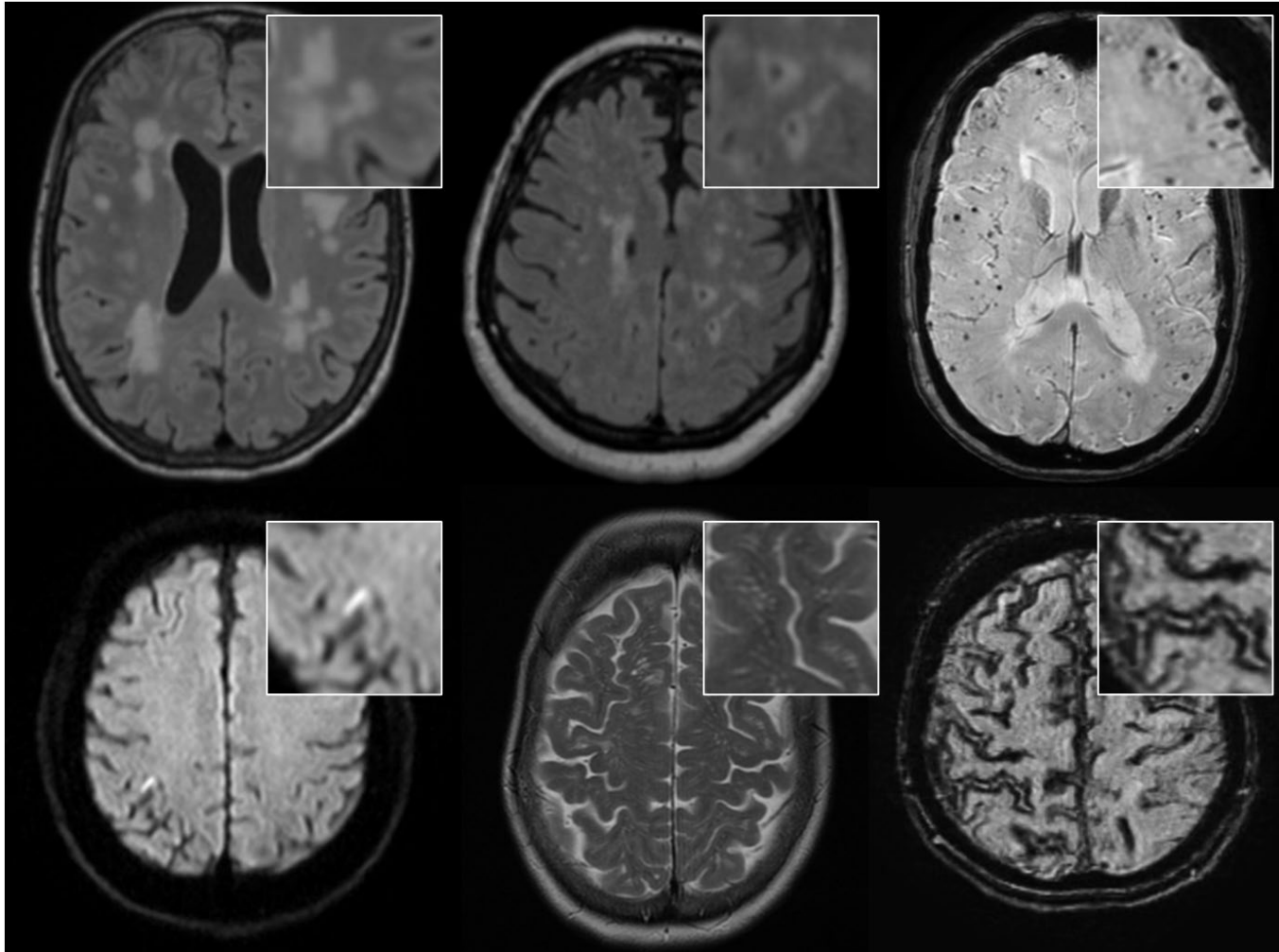
October 20<sup>th</sup> 2023



# Disclosures

- Our lab receives financial support from Therini Bio
- I have received consulting fees from Biogen and Eisai

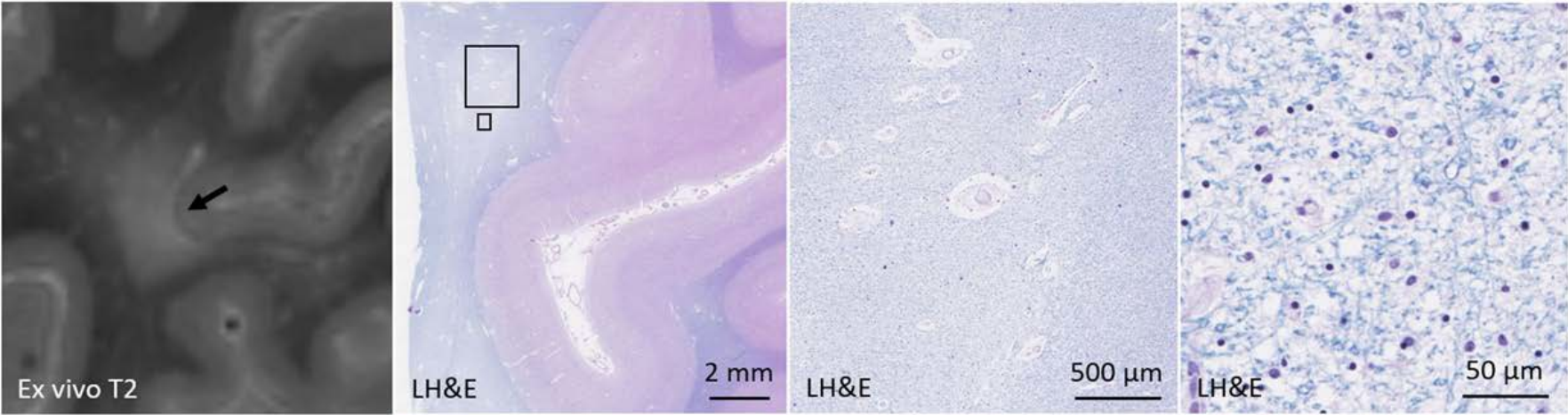
# Small vessel disease



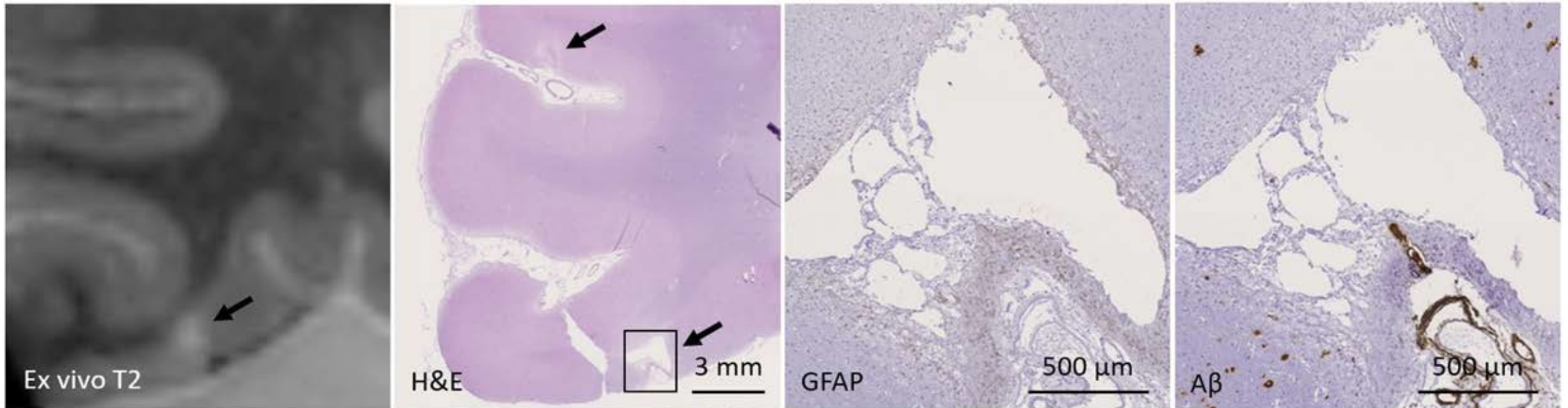
# Post-mortem MRI to bridge the gap



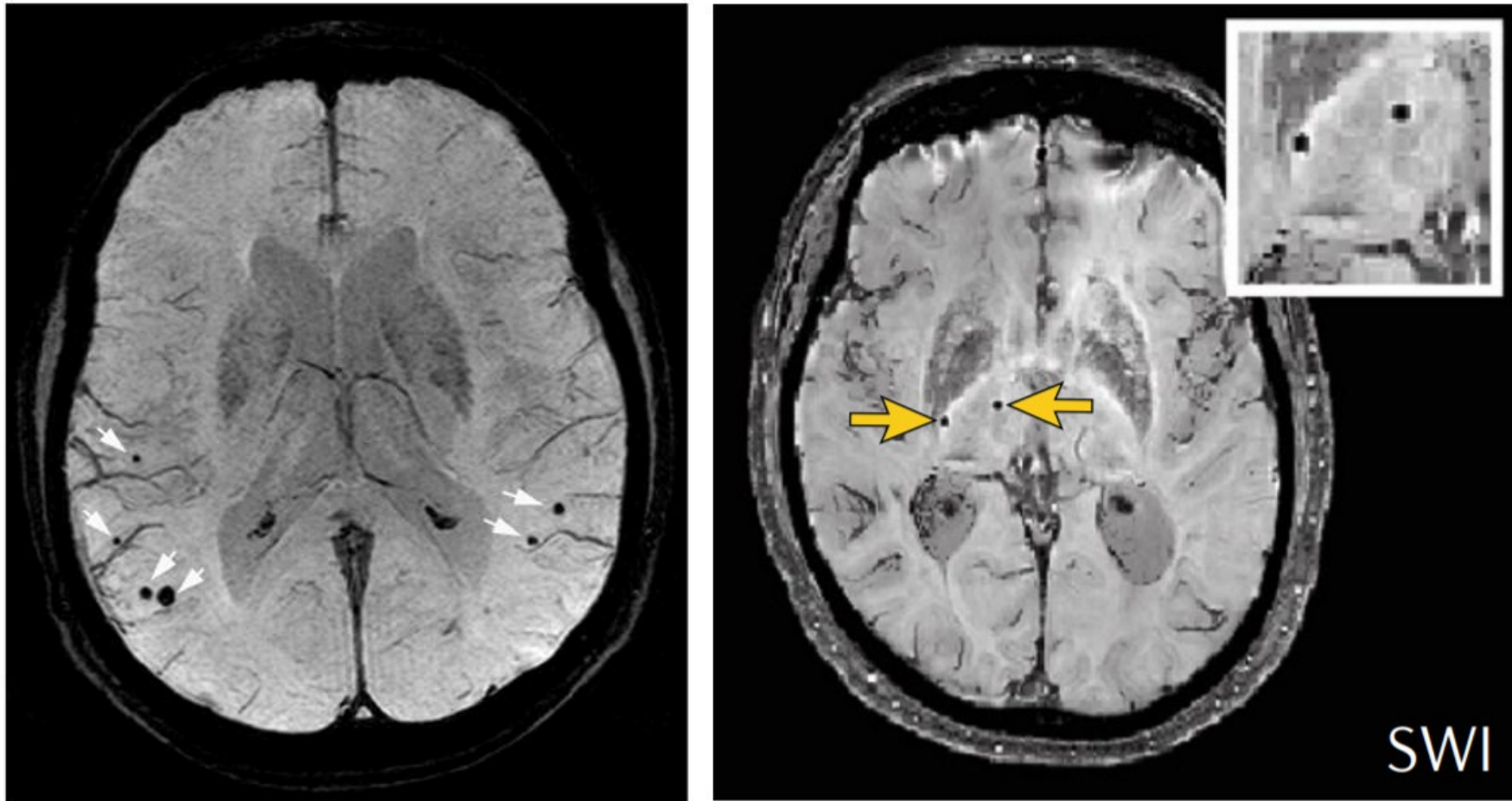
# White matter hyperintensities and lacunes

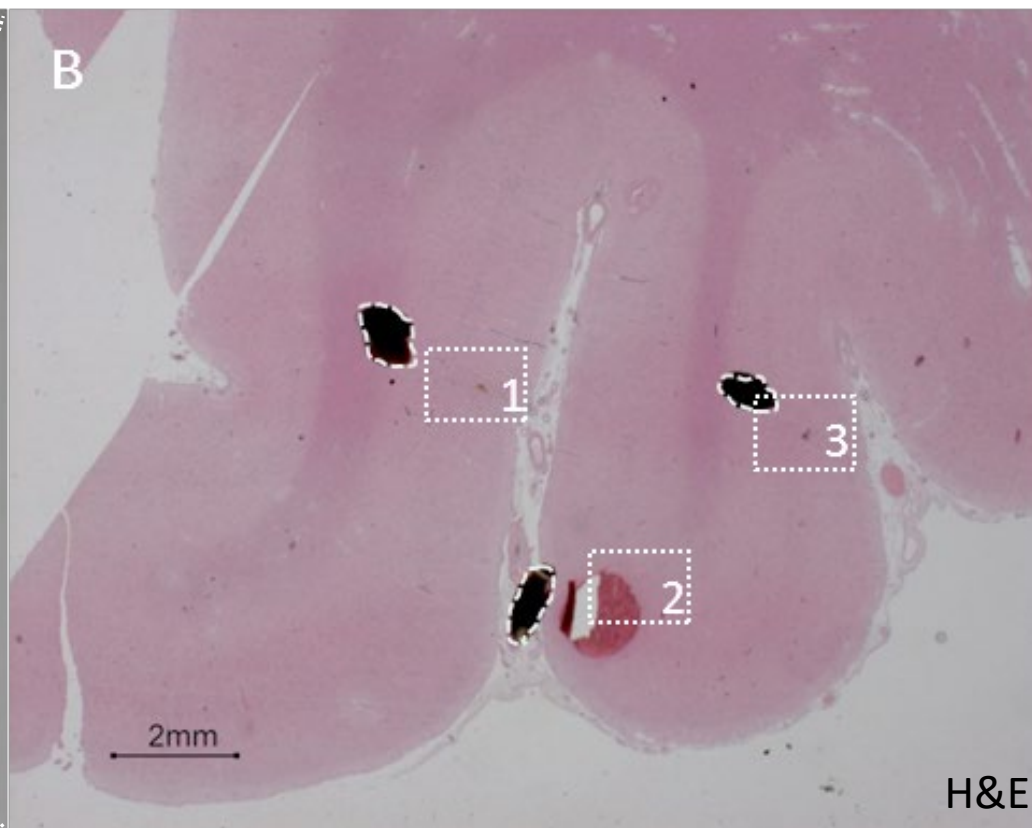
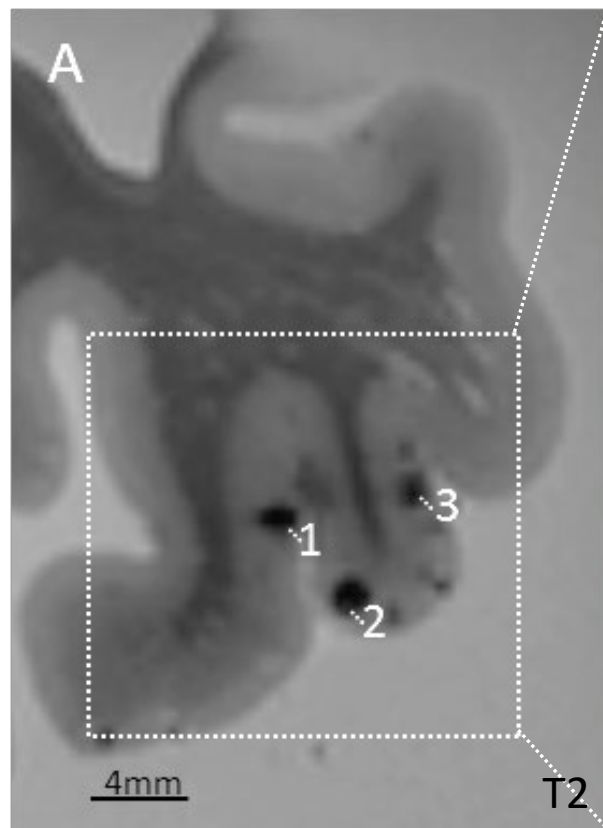


# Cortical cerebral microinfarcts

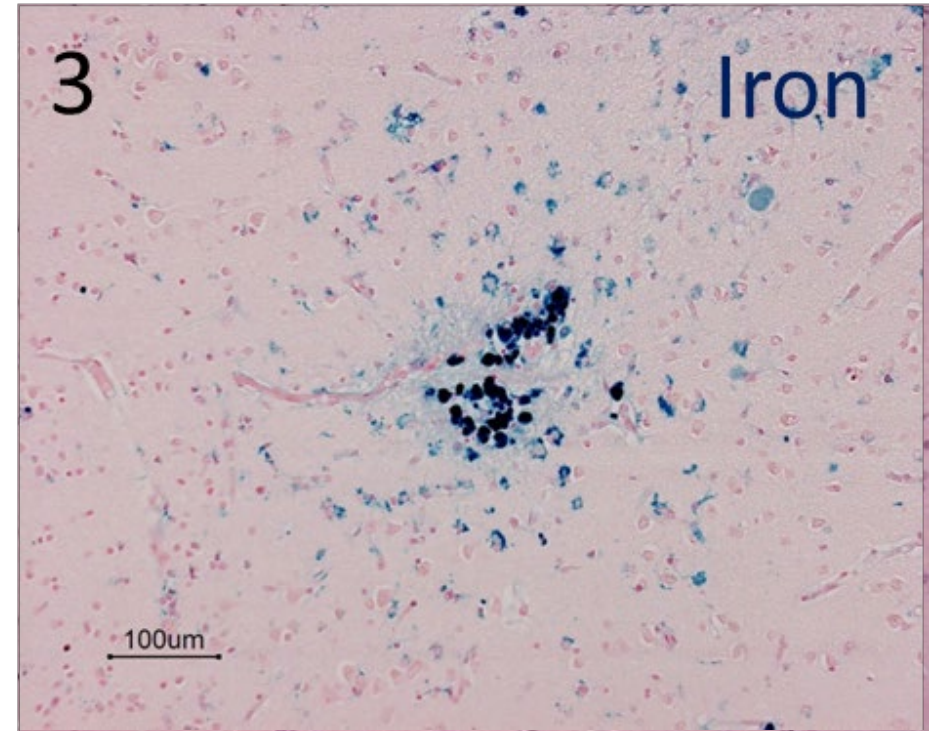
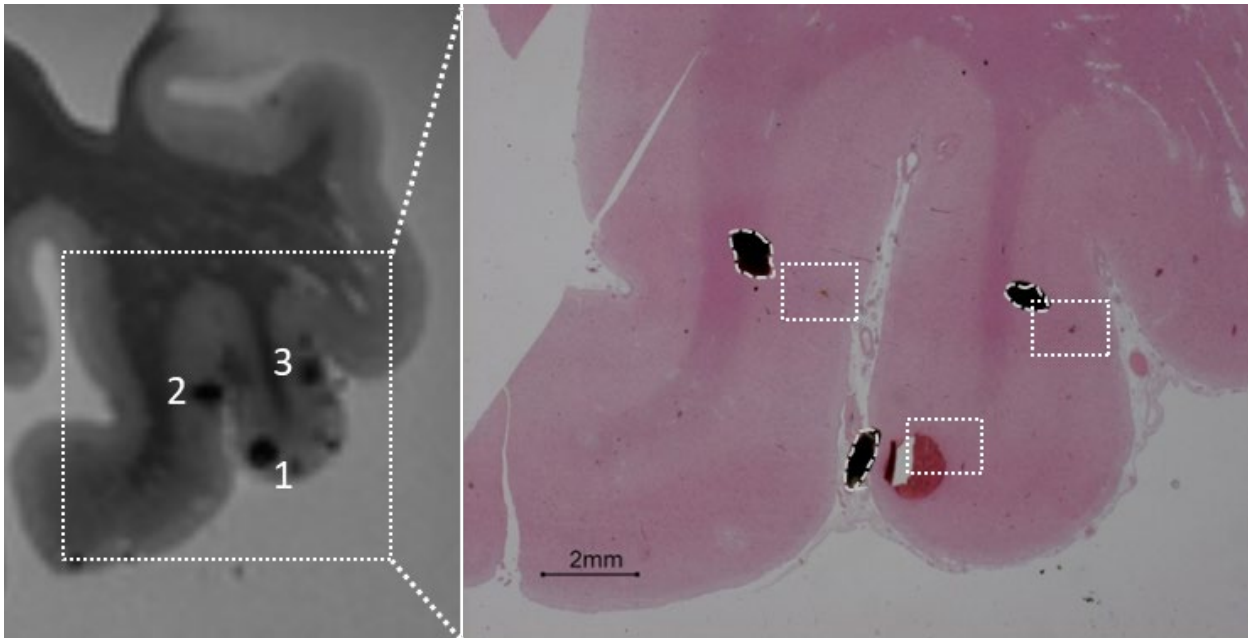


# Cerebral microbleeds









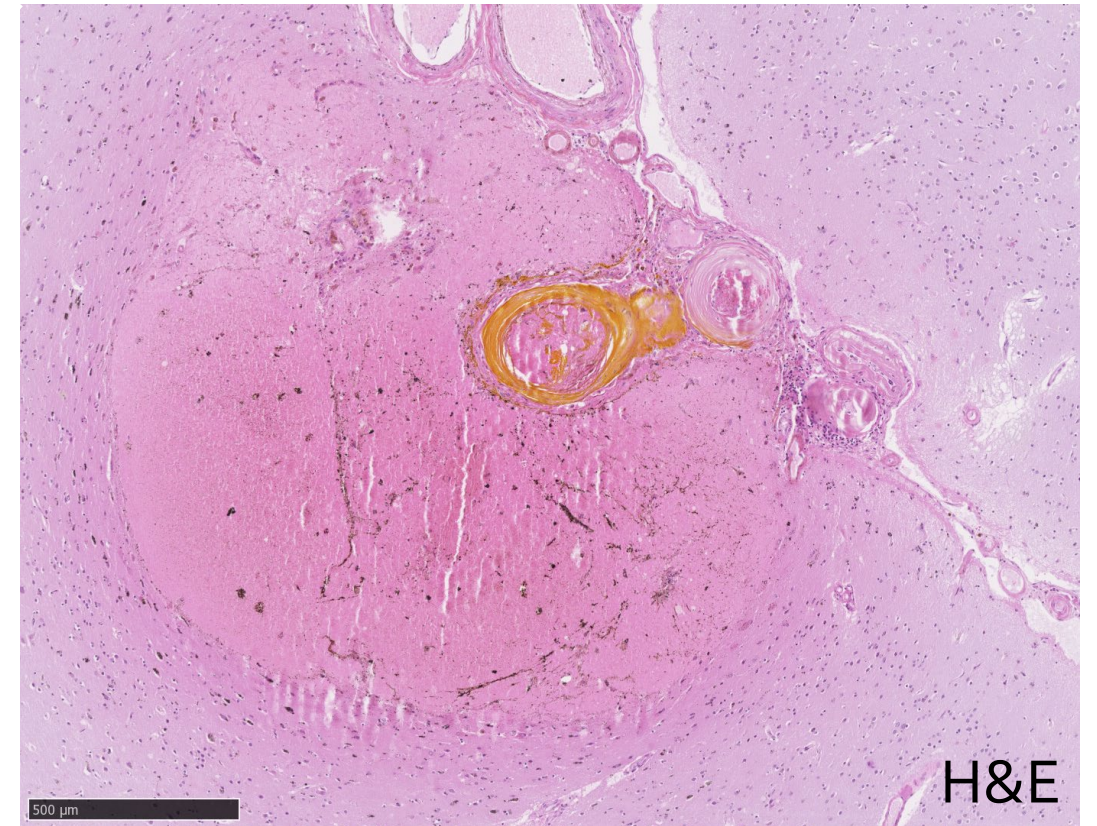
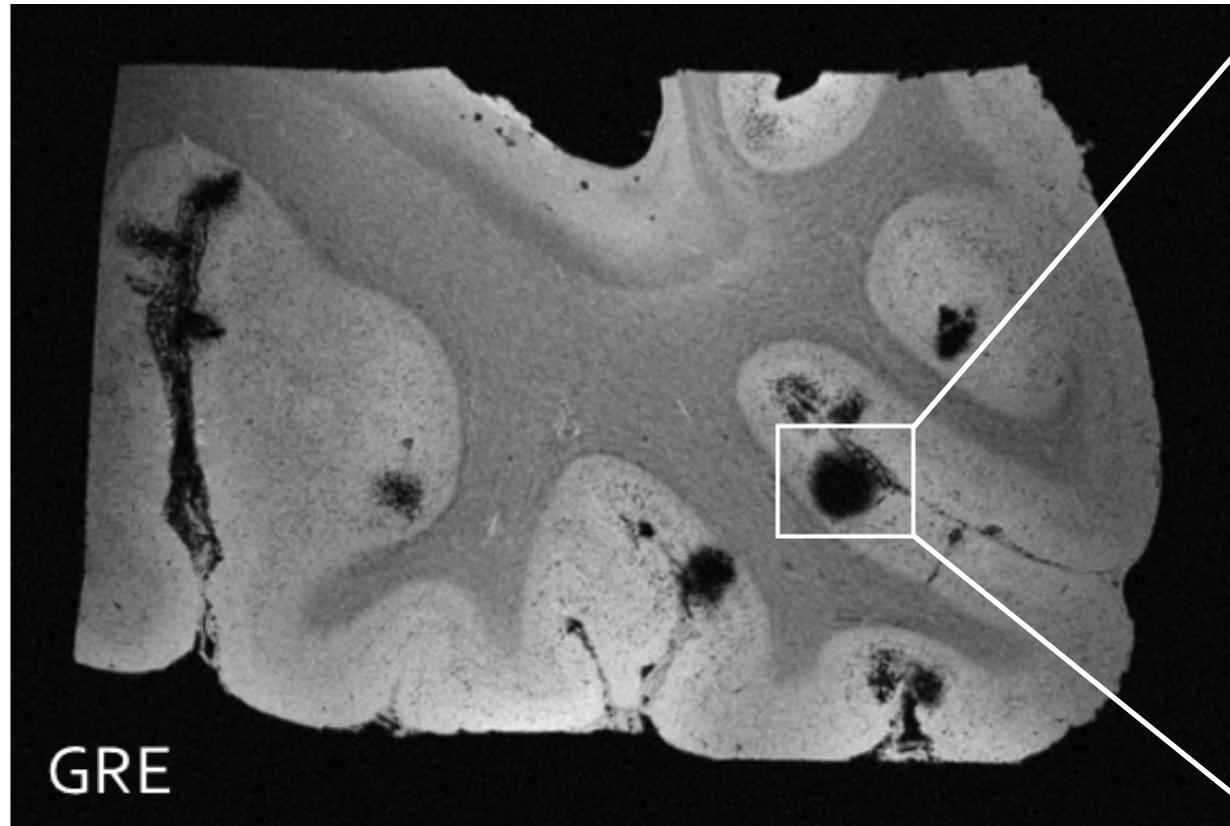
# MRI-targeted serial sectioning



7T GRE MRI, 75 x 75 x 75  $\mu\text{m}$

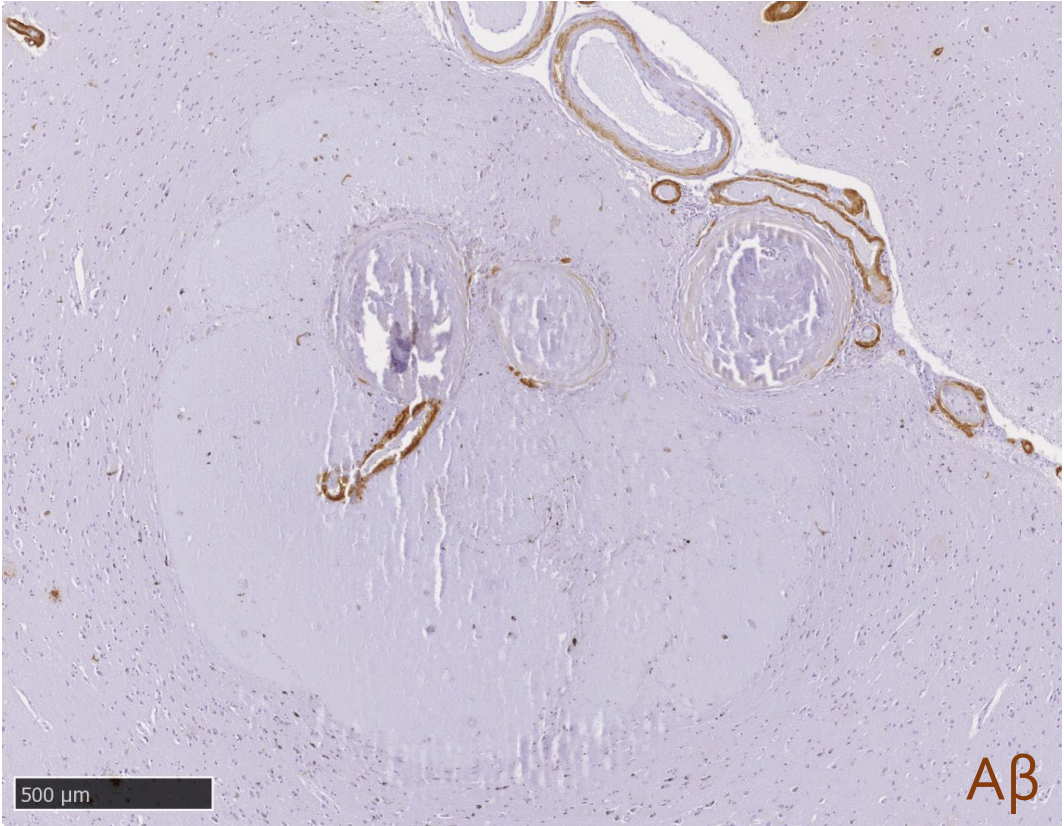
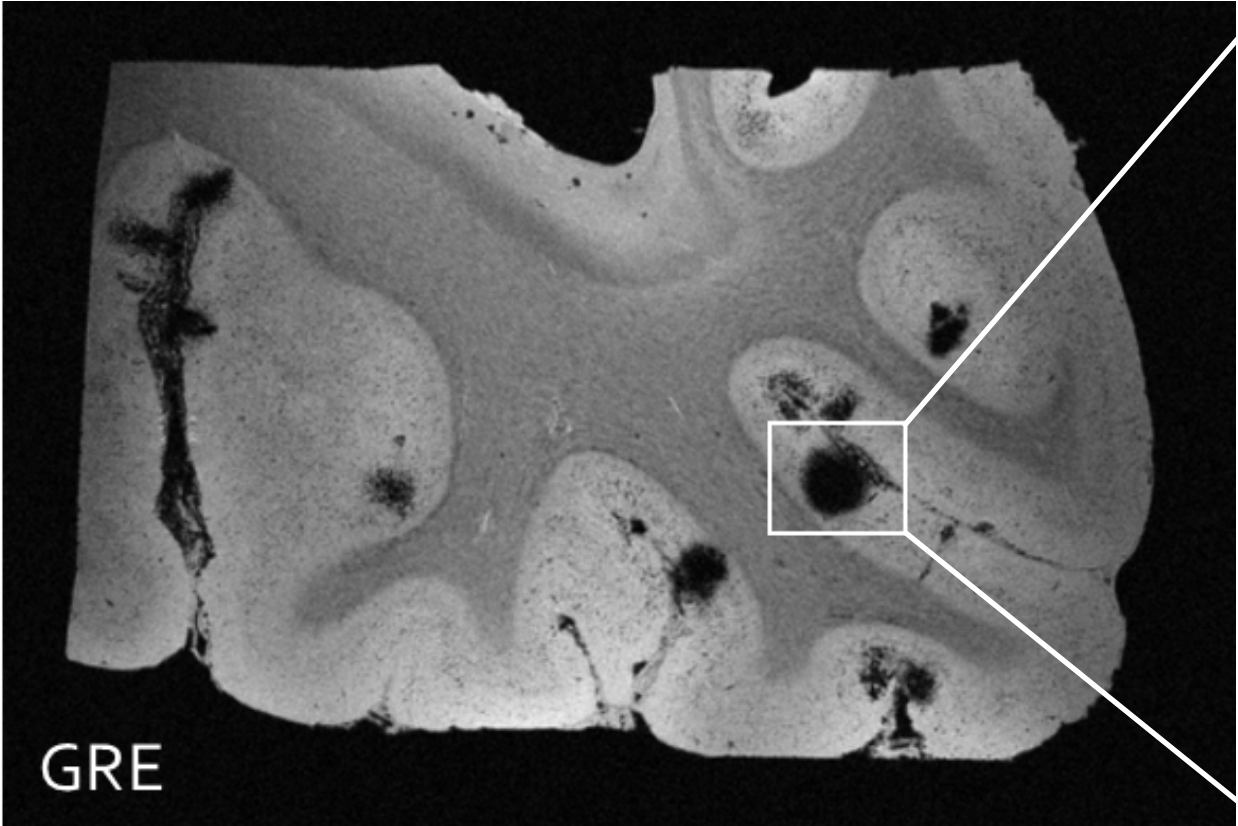


In CAA, microbleeds occur at the level of cortical arterioles



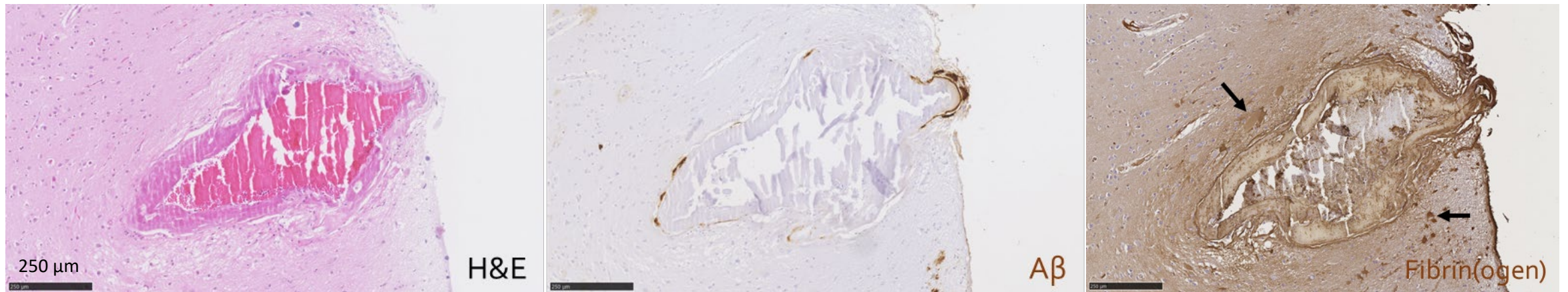
2 samples; n=28 CMB

# Culprit vessels show low vascular A $\beta$ burden at the rupture site



2 samples; n=28 CMB

# Microbleeds are associated with vascular remodeling

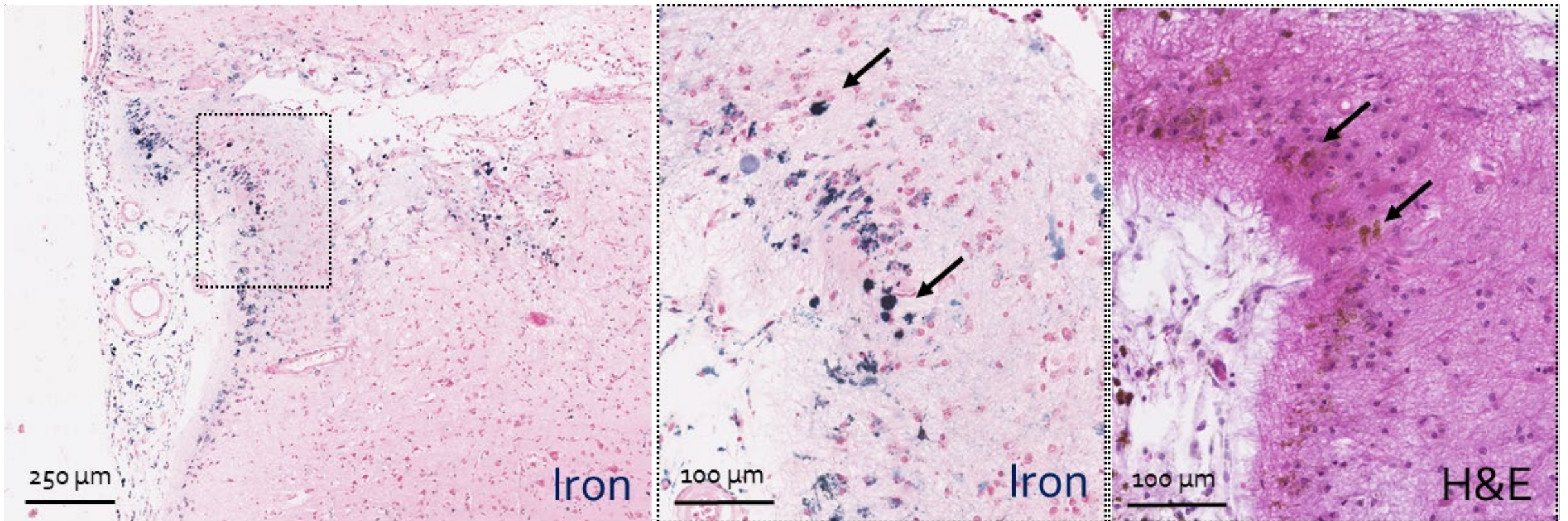


Vonsattel grade IV

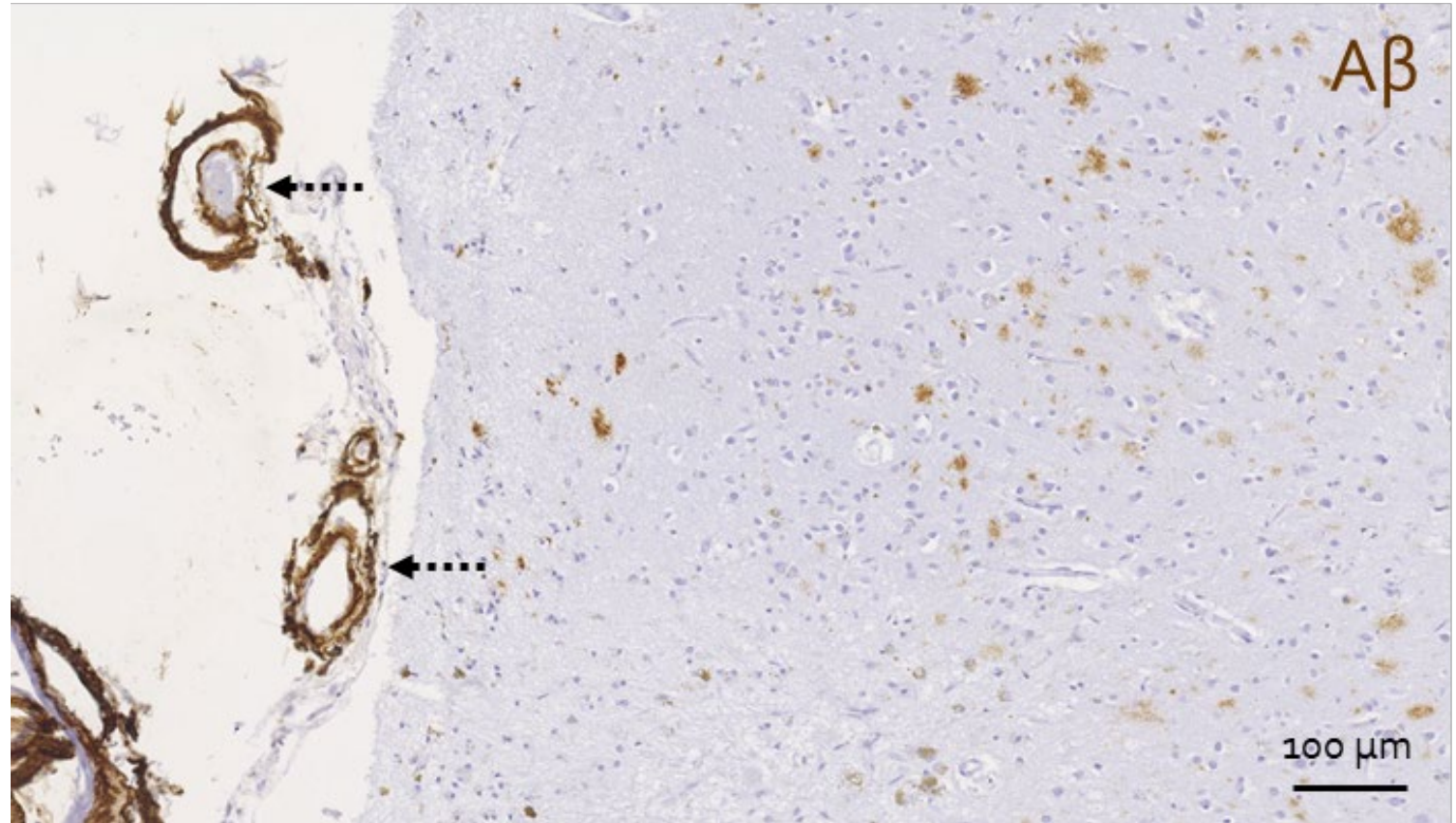
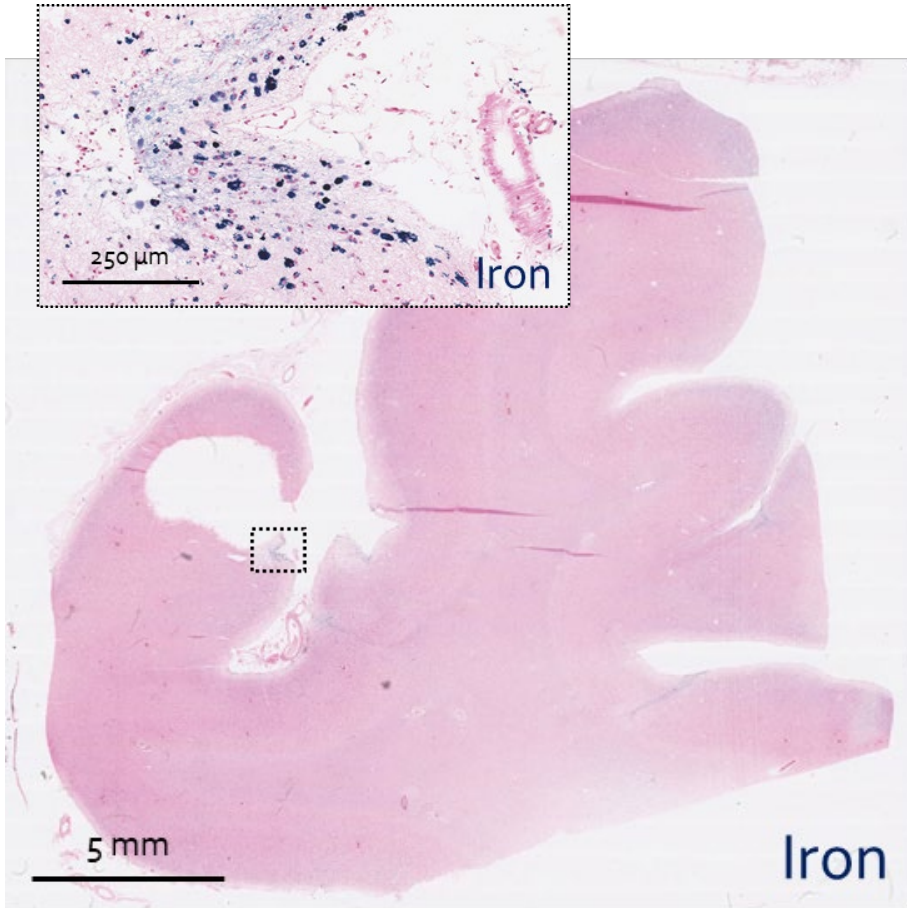
# Cortical superficial siderosis



In CAA, siderosis occurs at the level of leptomeningeal vessels

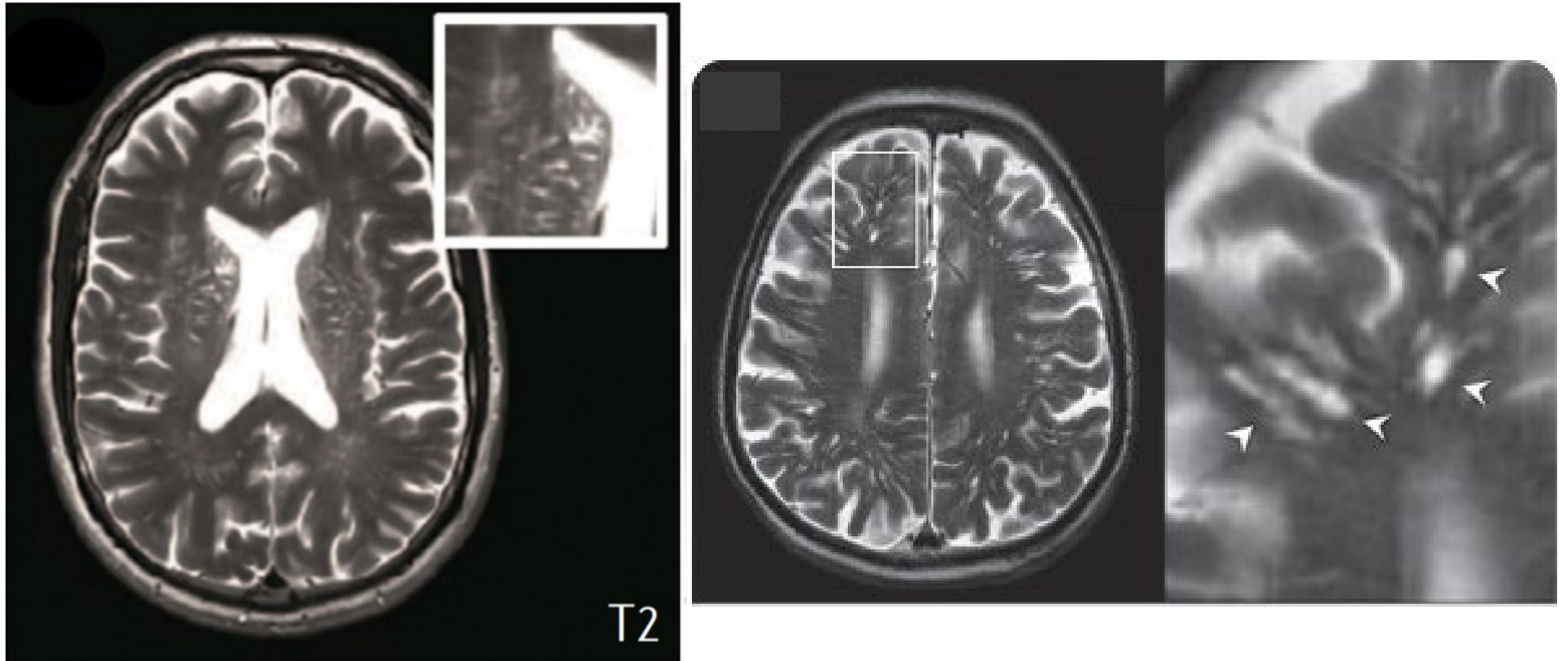


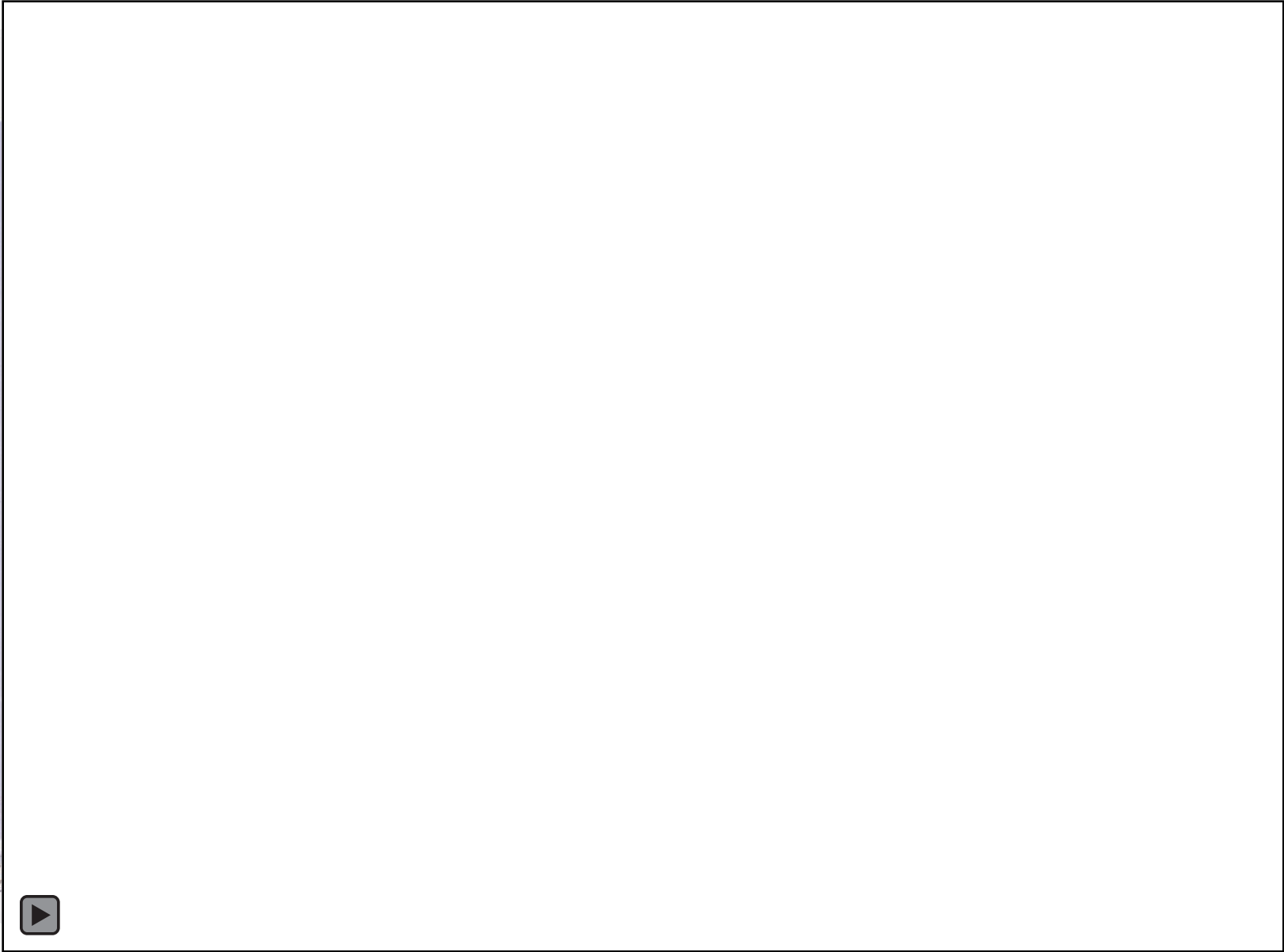
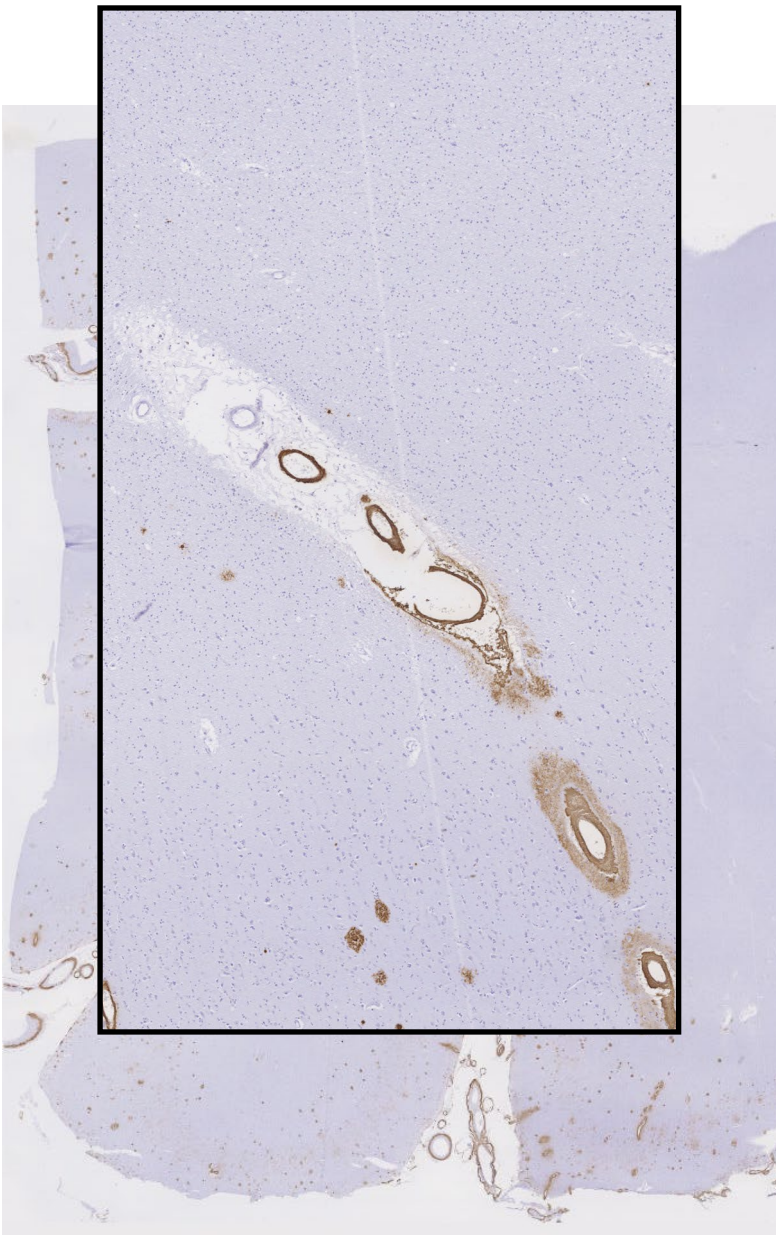
# Siderosis is associated with vascular remodeling

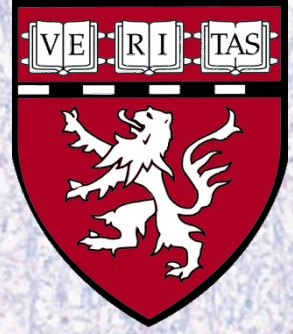




# Enlarged perivascular spaces







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