Gerstmann’s syndrome is a rare disorder resulting from damage to the angular gyrus of the dominant parietal lobe leading to agraphia, acalculia, finger agnosia and left-right disorientation. In adults the syndrome is usually seen after stroke. Particularly in young patients other causes need to be considered.

We present video, MRI and pathological evidence of the case of a 30 year old woman who developed Gerstmann’s syndrome as a result of a tumefactive multiple sclerosis (MS) lesion affecting the left cerebral hemisphere. Intravenous corticosteroids failed to stop rapid enlargement of the index lesion and occurrence of additional hemispheric lesions leading to clinical deterioration.

Brain biopsy confirmed the diagnosis of MS. Strong contrast enhancement of the lesions prompted us to start treatment with natalizumab 300 mg i.v. every four weeks leading to sustained disease remission over a 14 month follow-up period though complex-focal epileptic seizures require ongoing anti-epileptic treatment.

This case highlights the heterogeneous presentation of tumefactive MS, the need in some cases of an early brain biopsy, and the worthwhile consideration of natalizumab treatment where additional evidence supports a diagnosis of relapsing MS.