

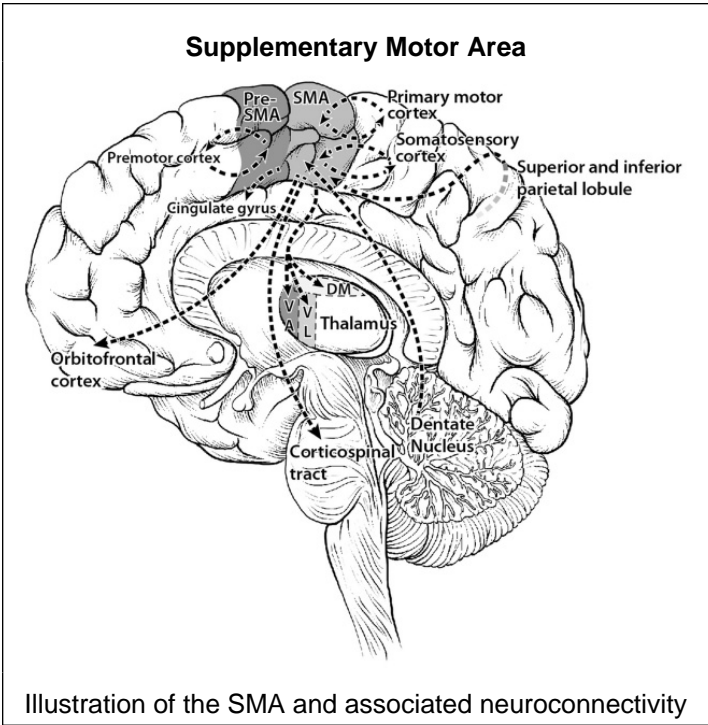
# Bilateral Supplementary Motor Area Syndrome: Clinical Presentation, Anatomic Considerations, and Patterns of Recovery

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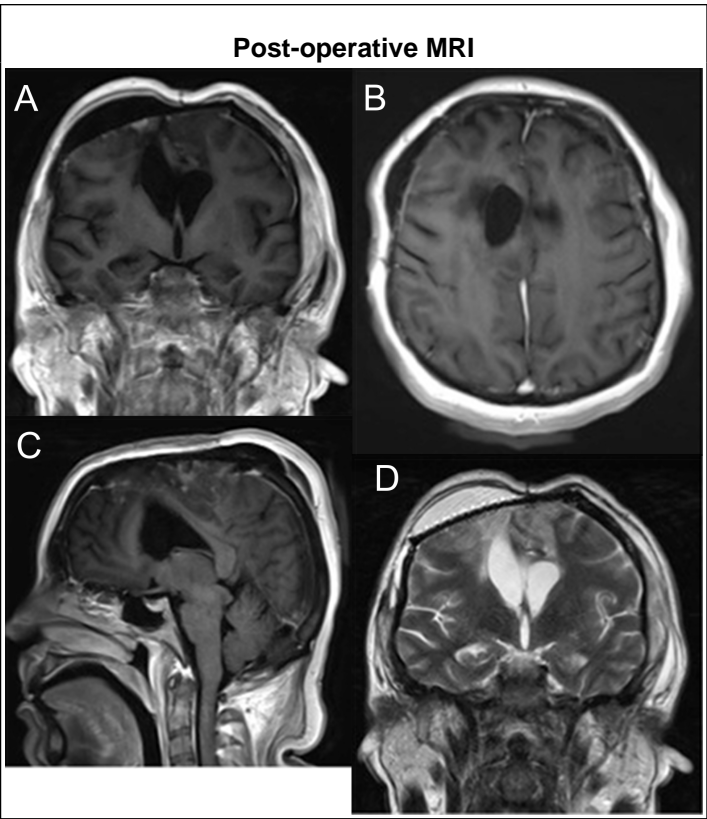
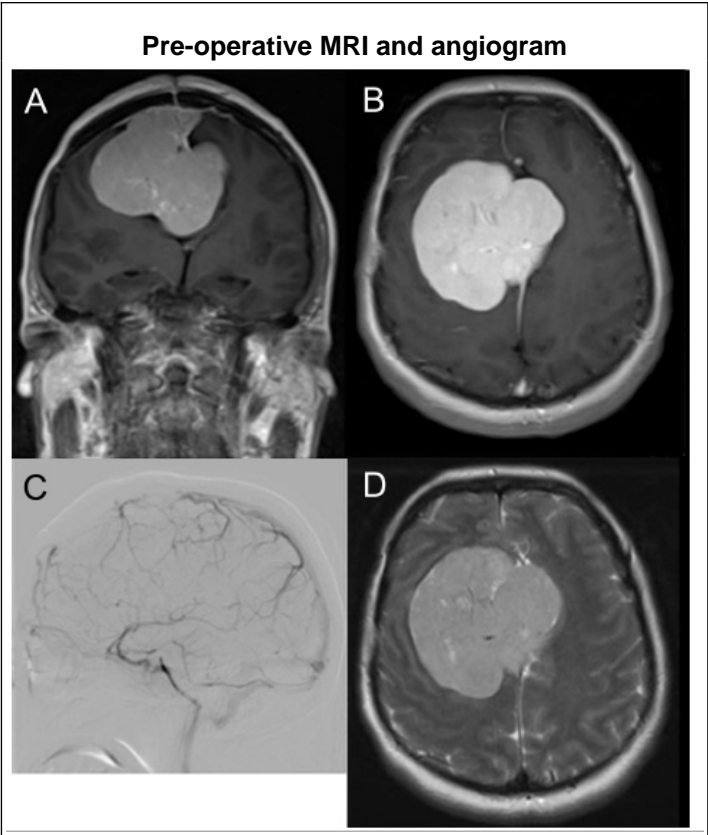
## Introduction

Unilateral supplementary motor area (SMA) syndrome is a well-recognized neurological condition characterized by hemiparesis, mutism, and apraxia that results from cortical injury to the SMA that typically begins to resolve within one week after surgery. Patients gradually return to their neurologic baseline with physical and neuro-cognitive rehabilitation. Bilateral SMA syndrome is much less common and a distinct clinical phenomenon that may have a different clinical profile due to compromise of both supplementary motor areas. We have sought to describe the clinical presentation, anatomic considerations, and patterns of recovery of bilateral SMA syndrome.



## Results

Two patients with resection of large, bi-frontal meningiomas that occluded the anterior third of the superior sagittal sinus. Following uncomplicated gross total resection, post-operative imaging demonstrates clinically insignificant edema and no restricted diffusion, but both patients were quadriplegic and aphasic post-operatively, which improved approximately two weeks later, returning to their pre-operative functional neurologic baselines at five months post-operative. Long-term neuropsychological testing showed mild residual motor apraxias.



## Conclusions

Compared to the unilateral SMA syndrome, bilateral SMA syndrome has a similar pattern of neurological deficits, distributed bilaterally, with a prolonged recovery period and residual motor apraxias. Involvement of both supplementary motor areas, and the association cortex around them, may explain the distinct pattern of presentation and recovery.