

SIMULTANEOUS DIAGNOSES OF CEREBRAL ARTERIOVENOUS MALFORMATION AND MULTIPLE SCLEROSIS IN PREGNANCY

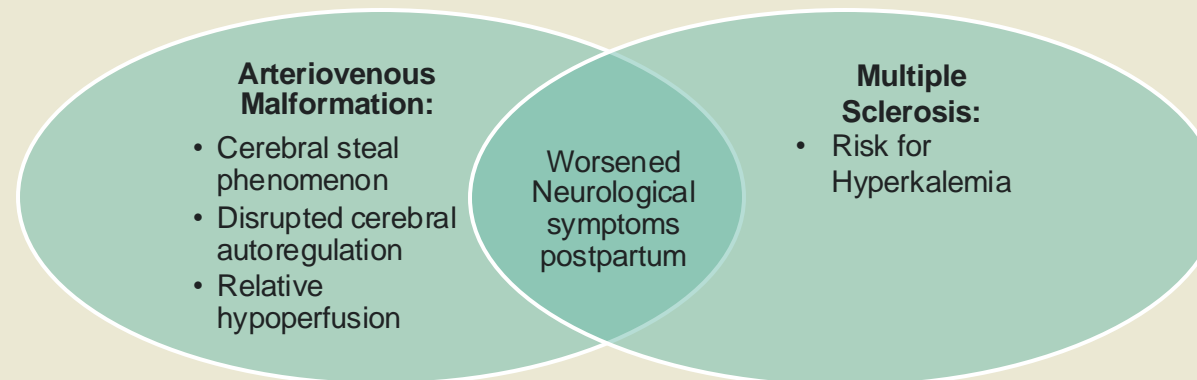
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Background

- Cerebral arteriovenous malformations (AVMs) are rare abnormal connection between veins and arteries in the brain.
 - 10% of all maternal deaths are due to AVM hemorrhage
 - Pregnant patients with an AVM have a roughly 5x higher risk of rupture than non-pregnant patients
 - Valsalva maneuver during a vaginal delivery results in increased intracranial pressure, which can cause AVM rupture
- Multiple sclerosis impacts respiratory function, can cause upregulation of nicotinic acetylcholine receptors, and increases the risk of hyperkalemia with use of depolarizing agents during induction.
- Both diseases provide relative contraindications to use of neuraxial anesthesia.



1. Lv, Interv Neuroradiol 2015

2. Porras, Stroke 2017

3. Keating, Obstet Med 2024

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Case Presentation

- 27-year-old G1P0 at 14 weeks presented with left-sided sensorimotor deficits, transient left monocular vision loss, difficulty ambulating.

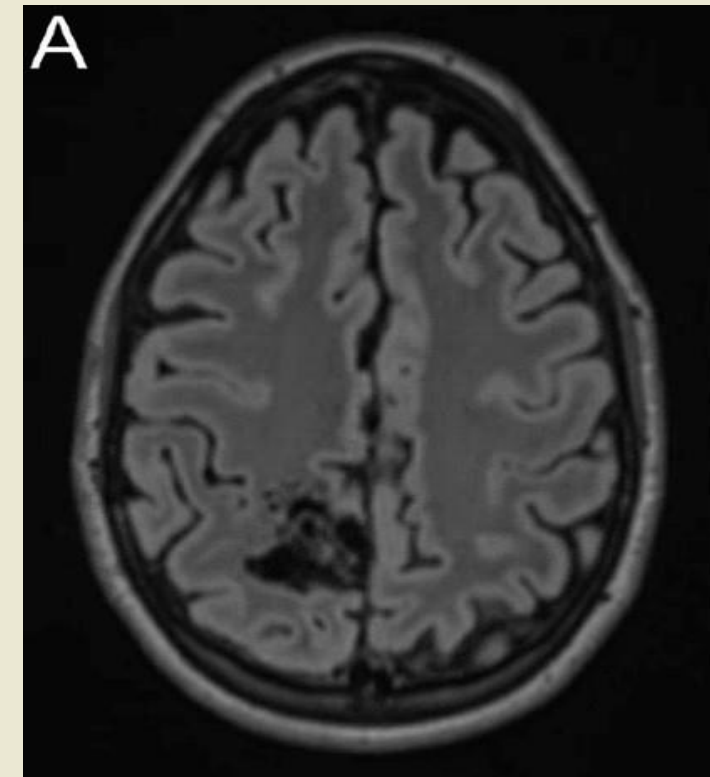
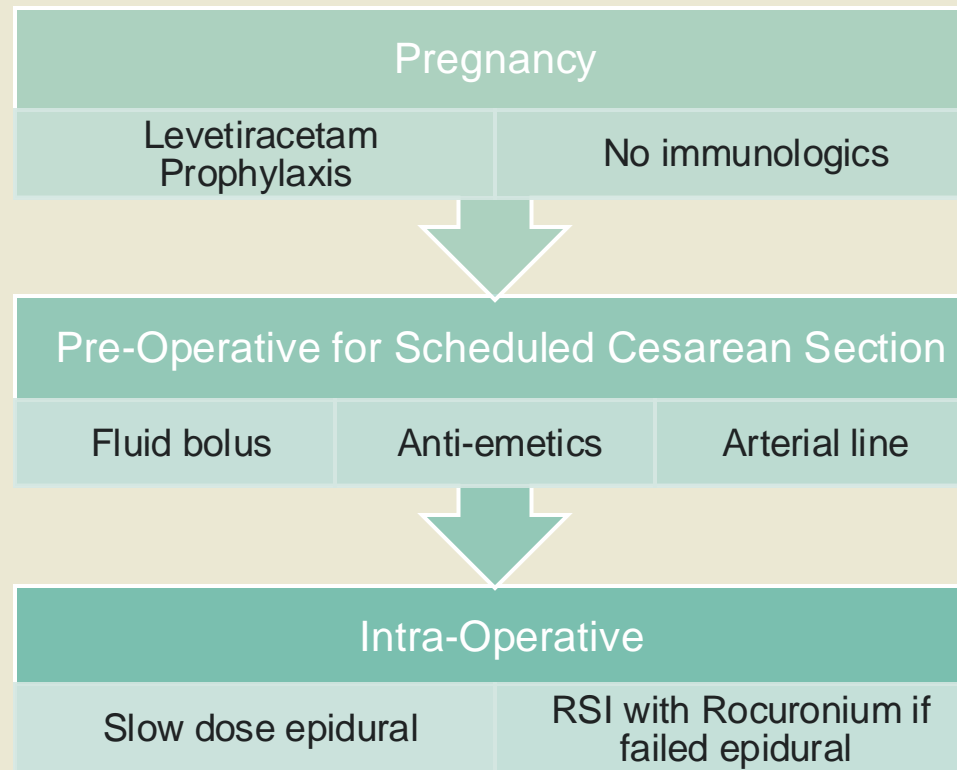


Figure 1(A) presents superior axial view of a T1 MRA with right frontoparietal AVM.

MRI showed MS lesions. Diagnosis confirmed with CSF oligoclonal antibodies.

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Conclusion

- Sudden increases in intracranial pressure can result in AVM rupture or cerebral steal phenomenon.
- Valsalva maneuvers should be avoided during delivery of someone with an AVM, given the risk of AVM rupture and hemorrhage.
- Ensure supportive care measures such as anti-emetics are in place prior to delivery.
- Spinal anesthesia in multiple sclerosis can potentially result in an MS flare due to local toxicities and is therefore often avoided.
- Multiple sclerosis upregulates nicotinic acetylcholine receptors, increasing risk of hyperkalemia if a depolarizing agent, such as succinylcholine, is used in an emergency situation.
- Close follow-up with Neurology is needed for these patients during and after pregnancy.