Pulmonary and Vertebral Arteriovenous Malformation in Pregnancy with Hereditary Hemorrhagic Telangiectasia: A Case Report

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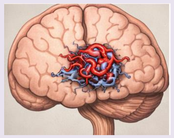
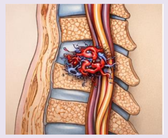
Hereditary Hemorrhagic telangiectasia - an inherited vascular disorder characterized by fragile malformed vessels causing mucocutaneous, gastrointestinal, pulmonary and visceral bleeding [1]. Manifestations can be

Epistaxis

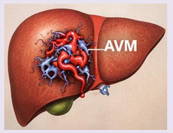


Intracranial hemorrhage, Stroke, Seizures

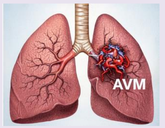
Mucocutaneous bleeding



Epidural hematoma



GI bleeding



Pulmonary Hypertension, hemoptysis, Right to left shunt

HHT & Pregnancy

↑ Plasma volume and Cardiac Output during pregnancy may lead to:

- Pulmonary AVM: Right-to-left shunting, elevated hemorrhage and embolic risk [2]
- Vertebral, sub-dural or spinal hemagioma: Venous engorgement, rupture and spinal cord compression[3]
- Intracranial Hemangioma: Stroke, Headache, Intracrania hemorrhage, Seizures.
- Chronic Anemia due to bleeding

Anesthetic Management & Outcome

Patient Profile

29F • G5P2 • 37 weeks' gestation • ASAIII • IOL

Key Diagnoses:

- Hereditary Hemorrhagic Telangiectasia
- Right lower lobe pulmonary AVM (stable nidus 2×1.6 cm)
- Ulcerative pancolitis on chronic prednisone
- Microcytic anemia, Hgb 8.5g/dL.
- Prior 3 RBC transfusions
- Prior epidural analgesia uneventful

Imaging and Workup:

- MRA/MRV brain: no AVM or aneurysm
- Lumbar MRI: L2/L4 vertebral hemangiomas.
- TTE: EF 60–65%, normal
- Coagulations: PT 15.6, INR 1.4 (10/2024); platelets 250k
- 2 Units pRBC ready

Anesthesia Plan:

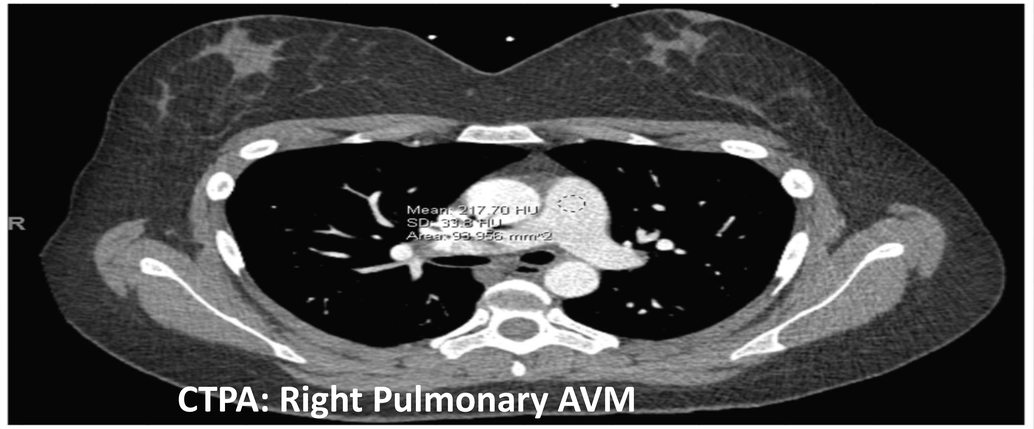
Labor Epidural Analgesia:

- Informed consent - Epidural hematoma
- Epidural catheter placed at L3-L4 interspace
- 0.2% Ropivacaine infusion
- Uncomplicated Vaginal Delivery
- Epidural catheter removed postpartum without complication.

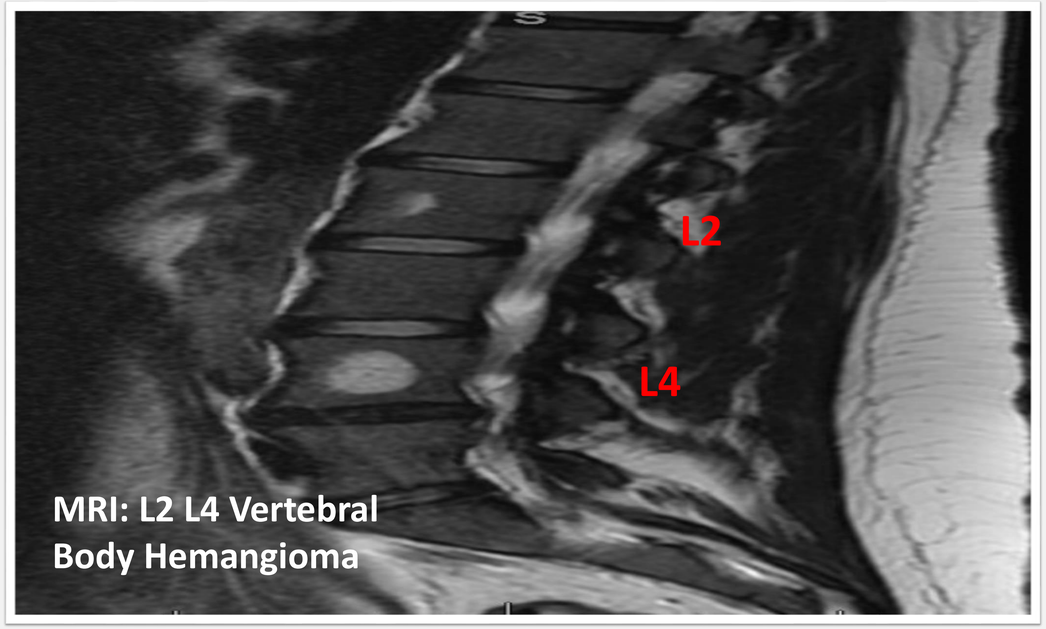
If Cesarean section required :

Neuraxial preferred Over General Anesthesia

- GA poses hemodynamic stress → risk of pulmonary AVM rupture, paradoxical embolism, and hypoxemia



CTPA: Right Pulmonary AVM



MRI: L2 L4 Vertebral Body Hemangioma

Key Points

Key Takeaways

1. Multidisciplinary planning (MFM, Hematology, Genetics, Anesthesia) is essential in HHT with pulmonary AVM
2. MRI of brain and spine is indicated prior to neuraxial procedures to exclude cerebral and spinal AVMs[4]
3. Neuraxial analgesia is safe when appropriately screened — superior to GA in pulmonary AVM
4. Vertebral hemangioma is not a contraindication; informed consent and shared decision-making are key
5. If general anesthesia was needed, emphasis should be given on minimizing hemodynamic stress to avoid rupture of pulmonary hemangiomas.
6. Intravenous Lidocaine, Cardio selective b-blocker (e.g. Esmolol,), Dexmeditomidine, Remifentanil infusion during Intubation, Etomidate as an Induction agent can be considered [5].

Refrences:

[1] Bari O & Cohen PR. Int J Womens Health. 2017;9:373–378.
[2] Eker OF et al. VASCERN Position Statement. Orphanet J Rare Dis. 2020;15:165.
[3] Brady S et al. Anaesthesia Reports. 2023;11:e12227.
[4] Faughnan ME et al. Ann Intern Med. 2020;173(12):989–1001.
[5] Li C et al. *Med Sci Monit*. 2015;21:3806-13.