

Peripartum management and inter-hospital planning for a pregnant patient with bleeding arteriovenous malformations and high-output heart failure from hereditary hemorrhagic telangiectasia

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UPMC | MAGEE-WOMENS
HOSPITAL



25 year-old

G1P0

Diamniotic dichorionic
twin pregnancy

History of epistaxis

24 weeks : dyspnea, cough, and lower extremity edema

Imaging revealed **3 pulmonary AVMs**, dilated portal and mesenteric veins, and enhancing vascular structures [right gluteal, left iliacus, right chest wall, right paravertebral]

HHT was diagnosed and she **had coil embolization of two pulmonary AVMs**

High output HF [CO 14L/min]

Post-procedure, she had dyspnea and increased oxygen requirement, so was **transferred to our level IV cardiac hospital**

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Due to multiple mucocutaneous telangiectasias, **airway instrumentation should be avoided**, and nasotracheal intubation and gastric nasal probes are prohibited

Cerebral AVMs should be ruled out, and if present, strict peri-anesthetic blood pressure control is critical to prevent intracerebral hemorrhage

Risk of developing **high output heart failure** resulting from these vascular malformations, especially in the setting of pregnancy where AVMs are prone to grow in response to hormonal variations



Patients with HFpEF and diastolic dysfunction are **less tolerant of tachycardia and volume shifts** [risk for cardiogenic shock with potential need for mechanical support]

Spine imaging to **rule out the presence of spinal AVMs** before undergoing neuraxial anesthesia

Presence of **intraabdominal AVMs** increases the risk of surgical morbidity

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1

- **30 + 2 week elective cesarean delivery**
- Combined spinal epidural
- Arterial canula + central venous access
- CT surgery readily available

2

Strict HD monitoring and BP control
EBL : 1000 ml
Transfer to PACU

3

- Cardio-pulmonary arrest [1h post-op]
- Re-intubated
- FAST exam at bedside
- CT scan : **Ruptured L pulmonary AVM** with massive L hemothorax + mediastinal shift

4

Massive transfusion protocol initiated
CT surgeon : 28Fr chest tube **[1.3L]**

5

- Interventional **radiology performed coiling of ruptured AVM**
- Ongoing resuscitation with appropriate blood products

6

- Transferred to ICU for post-op monitoring
- **Extubated POD 1**
- No deficits

References

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2. Begbie ME. Postgrad Med J.PMID:12566546
3. Faughnan ME. Ann Intern Med.PMID:32894695