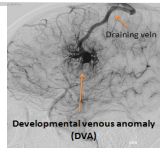


Anesthetic Approach for elective C-Section for a Patient with Developmental Venous Anomaly

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Developmental Venous Anomaly

- ✓ Most common cerebral vascular malformation (60%)
- ✓ Can be associated with cavernous malformation (CM)
- ✓ Conservative management



- Estrogen
- Progesterone
- VEGF
- bFGF
- ↑ CO, BV



RISK OF HEMORRHAGE

Kalani MY J Neurosurgery 2013 } Risk of hemorrhage from CM is not changed
 Witiw CD Neurosurgery 2012 } during pregnancy, delivery, or postpartum



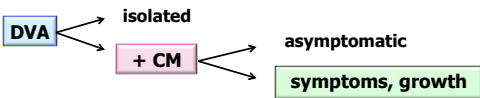
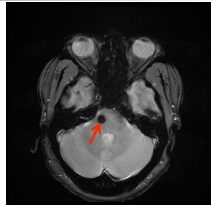
Clinical Case

HPI: 31 yo F, G5P3 with R pontine DVA, h/o recurrent ICH for elective CS

Neuro:

- L-sided weakness
- L-sided paresthesia, numbness
- L-sided HA
- dizziness
- sluggish speech and forgetfulness

MRI: stable R pontine CM



Multidisciplinary Approach

OB

VD vs CS

Simonazzi G 2014: Symptomatic CM 16 cases - 9 CS, 4 VD

Anesthesia

GA vs NA

- hemodynamic instability with GA
 - increased ICP with GA
- gradual sympathetic block with epidural

Neurology

- elective CS under epidural anesthesia
- maintain SBP of <120 mmHg



Neuraxial Anesthesia

- Difficult advancement of the catheter
- New R ear and UE numbness
- R Horner's syndrome
- Hypotension

STROKE ?

SUBDURAL BLOCK ?

- Patchy block
- High sensory
- Minimal motor
- Hypotension
- Horner's syndrome
- Trigeminal nerve palsy
- HA
- Apnea



Management of Subdural Block

- No benefit of radiologic confirmation
- Reassure patient
- Labor vs CS ?
- Emergent vs Elective ?

Pull out catheter and convert to...

General

- ★ Bradycardia with succinylcholine

Epidural

- ★ Difficult placement

Spinal

- ★ High level

- After 6 hours: uneventful spinal anesthesia for CS





Conclusion: Considerations for DVA

- **Isolated or associated with other vascular abnormalities**
- **Ongoing neuro symptoms**
- **Imaging: changes in size**
- **Multidisciplinary approach**
- **Hemodynamic stability during CS**
- **Epidural anesthesia provides gradual sympathetic blockade**

References:

1. Ku MG, et al. (2009) J Korean Neurosurgery 45(1):46-9.
2. Carvalho CS, et al. (2013) Braz J Anesthesiology 63(2):223-6.