Anesthetic Considerations in an Obstetric Patient with Hemoglobin Casper Complicated by Moyamoya

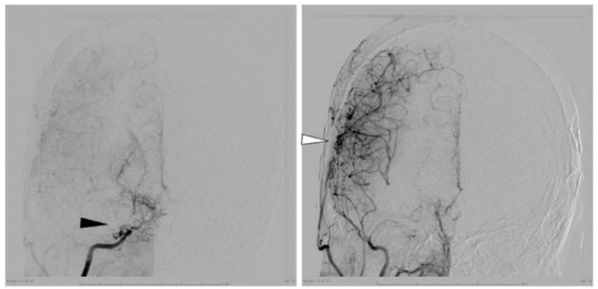
Mario Belfiglio M.D., M.S.
Damon Wallace M.D.
Heather Acuff M.D., Ph.D.

Background

- Hemoglobin Casper
  - Rare unstable hemoglobinopathy
  - Disrupted 3º Hgb structure
    --> chronic hemolysis & transfusions
- Moyamoya Disease
  - Narrowed arteries around Circle of Willis
    --> collateral vessels
  - Risk for stroke & hemorrhage
  - Associated w/ Hgb Casper

21yo F G1P0 @ 32w4d

- PMH: transfusion-dependent Hgb Casper c/b Moyamoya & strokes
- PSH: Pial Synangiosis surgery (10y)
- Transitioned from monthly transfusions to automated exchange transfusion after becoming pregnant



Department of Anesthesiology

Ob Med 2016;9(4):177-180
Int J Ob Anes 2006;15(2):152-8
Case Rep Ob Gyn 2012;638471
Open J Anes 2023;13:101-107

UNIVERSITY OF MICHIGAN
MEDICAL SCHOOL
MICHIGAN MEDICINE

Anesthetic Considerations in an Obstetric Patient with Hemoglobin Casper Complicated by Moyamoya

Mario Belfiglio M.D., M.S.
Damon Wallace M.D.
Heather Acuff M.D., Ph.D.

Anesthesia Pre-op Consult
32w4d

Plan for vaginal delivery

Early epidural: reduce pain, avoid hyperventilation & hypotension
--> maintain CBF

If C/S: arterial line & low-dose CSE w/ slow up-titration

Hospital Presentation
37w0d

Presented with acute right-sided pulmonary embolisms requiring therapeutic heparin infusion

Scheduled c-section to decrease time off anticoagulation & reduce risk of hemorrhage

C-Section

Pre-op: 2 large-bore IVs, arterial line
Heparin discontinued 1-hour prior
Coordination w/ hematology & blood bank

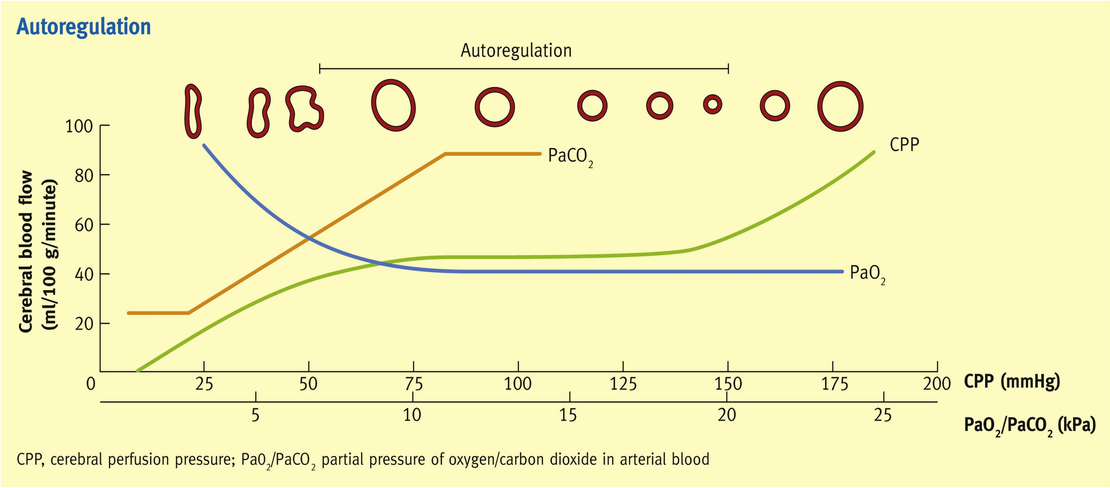
Intra-op: General anesthesia + TAP blocks

Post-op: No complications, stroke, or blood transfusion (EBL 998 mL)
Heparin restarted 1-hour post-op

Anesthetic Considerations in an Obstetric Patient with Hemoglobin Casper Complicated by Moyamoya

Mario Belfiglio M.D., M.S.
Damon Wallace M.D.
Heather Acuff M.D., Ph.D.

- No optimal method of delivery
- Physiologic goal: maintain CBF
  - Vaginal delivery: pushing & Valsalva might increase ICP
  - C-section: hypotension might cause hypoperfusion
- Recommendations for c-section:
  - Neuraxial techniques favored
    - Neurological status can be monitored
    - Avoids abnormalities in ventilation
  - CSE favored over spinal due to lower risk of acute hypotension
  - Recommend arterial line for MAP & PaCO2 monitoring



CPP, cerebral perfusion pressure; $PaO_2/PaCO_2$ partial pressure of oxygen/carbon dioxide in arterial blood

Ob Med 2016;9(4):177-180
Int J Ob Anes 2006;15(2):152-8
Case Rep Ob Gyn 2012;638471
Open J Anes 2023;13:101-107

Department of Anesthesiology
UNIVERSITY OF MICHIGAN MEDICAL SCHOOL
MICHIGAN MEDICINE