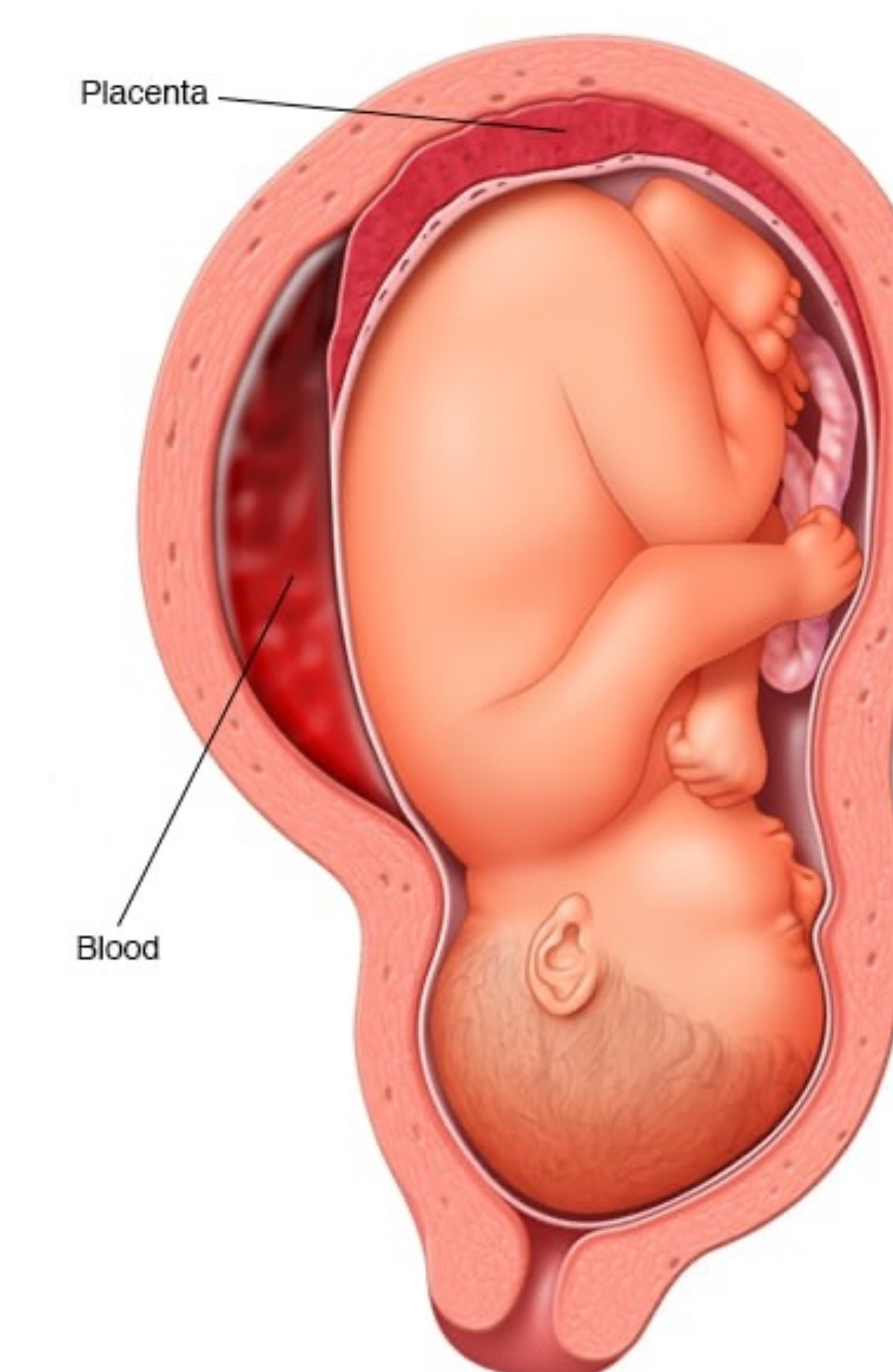
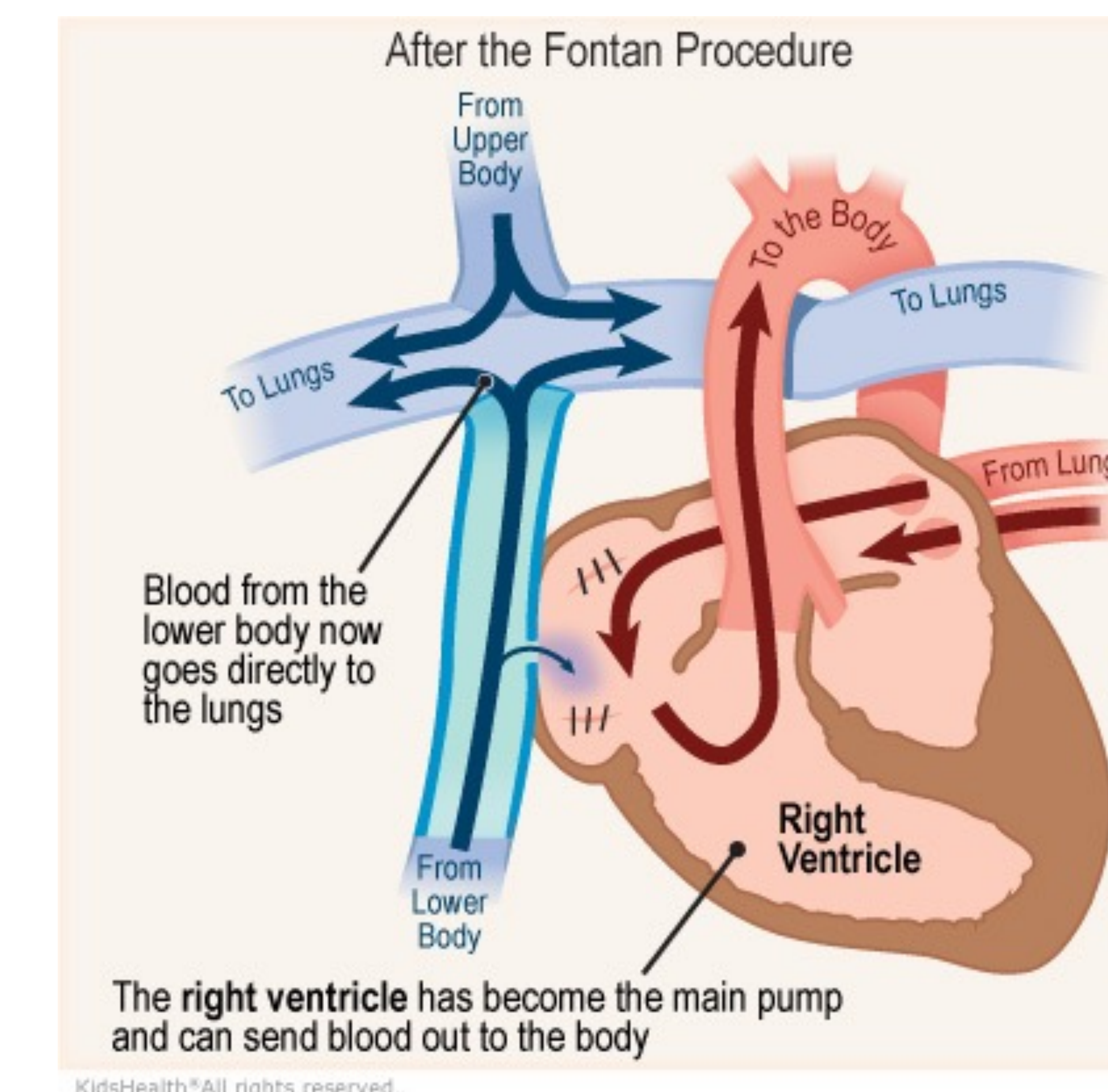


A Case of Placental Abruption Complication by Maternal Fontan Physiology

Mercades Meuli DO, Anne Shapiro DO

- The Fontan operation is a life saving intervention for individuals born with single ventricle physiology
- Fontan palliation results in derangements of the normal CV hemodynamics that can adversely affect pregnancy
- Pregnancy superimposed on the Fontan circulation could be challenging to the homeostatic balance achieved by these patients
- Parturients with normal cardiovascular anatomy and function easily increase their cardiac output (40% to 50%) through increases in stroke volume (25% to 30%) and heart rate (15% to 20%) which may not be easily tolerated with Fontan physiology
- Patients with Fontan physiology are unique and complex and require a perfect balance of preload, pulmonary vascular resistance and cardiac output which can be challenging due to the physiologic changes of pregnancy.
- Fontan physiology may be associated with poor placental health and can lead to placental abruption, preterm delivery, and IUGR

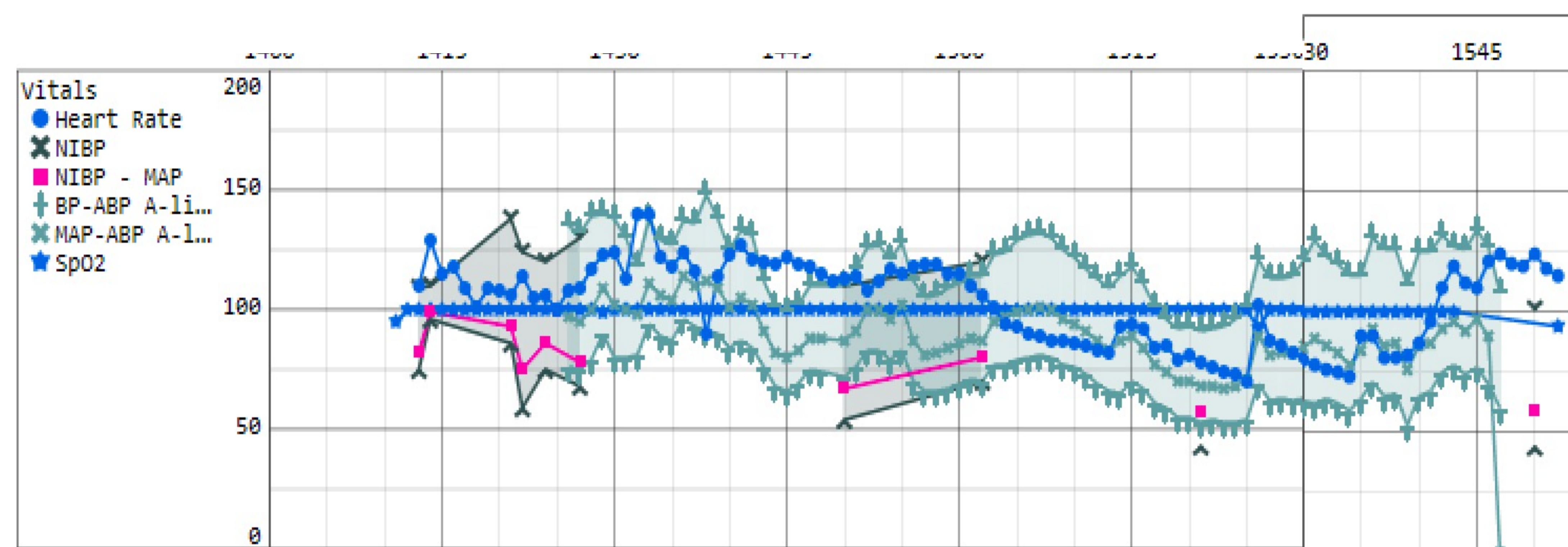


Case Presentation and Perioperative Management

- A 21-year-old woman presented by ambulance to L&D at 35w5d with painful vaginal bleeding
- She was diagnosed with placenta abruption based on tachysystole, non reassuring fetal status, and vaginal bleeding
- She was urgently brought to the OR for a cesarean section

Pertinent Medical Hx

- Hypoplastic right heart s/p fontan repair
- Fontan assoc. liver dz with perigastric and perisplenic varices
- Lovenox use (unknown last dose)
- NYFC III
- AW: MP 2, full ROM, 5-6cm TM distance, reassuring airway



Admission Labs:

BMP 389 (nml 0-449) INR 0.9, PTT 32, fibrinogen 408, H/H 10.9/36.4, PLT 137

Case Management

- Decision to proceed with GA
- Pre-induction arterial line and two 18g PIV's
- Phenylephrine infusion ready
- RSI with etomidate and succinylcholine
- Intra-op complications: uterine atony
- QBL: 1300mL, no blood products given, 700ml LR
- Extubated at end of case, recovered in PACU
- Dispo: ICU
- No postop complications

Discussion and Learning Points



Maintain Preload

- Most important determinant in maintaining CO
- Minimize large changes in preload
- Avoid aortocaval compression



Avoid elevations in PVR

- Avoid Hypoxia, hypercarbia, acidosis
- Avoid high levels of PEEP, high volume PPV
- Increases in intrathoracic pressure may decrease pulmonary flow



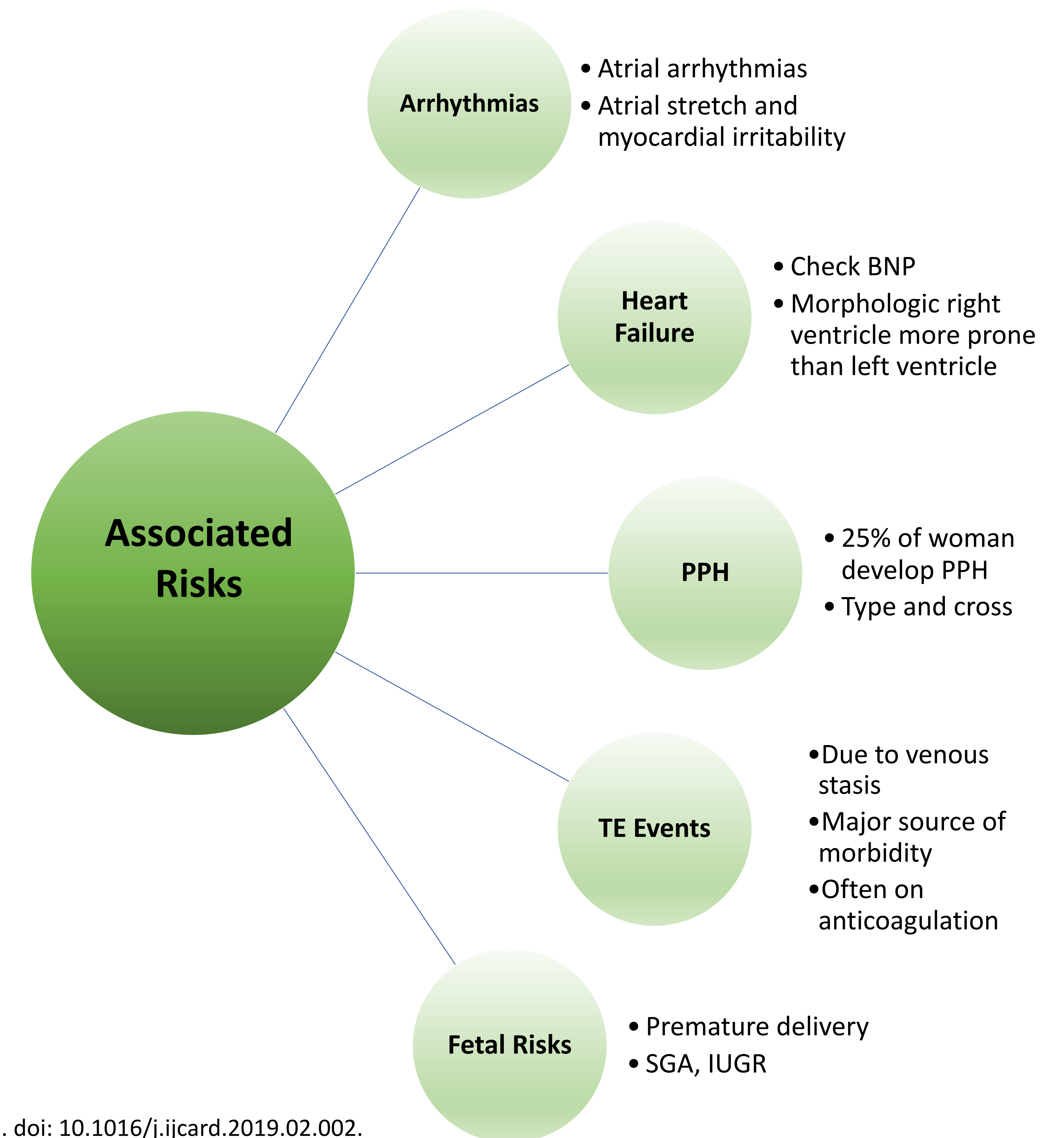
Monitoring

- Arterial line
- Telemetry postpartum
- Central line if poor functional status preop
- Consider TEE



Multidisciplinary care throughout pregnancy

- OB/Gyn, MFM, nursing
- Cardiology
- OB Anesthesiologist



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