Cesarean Delivery in a Parturient with Multiple Complex Congenital Cardiac Lesions

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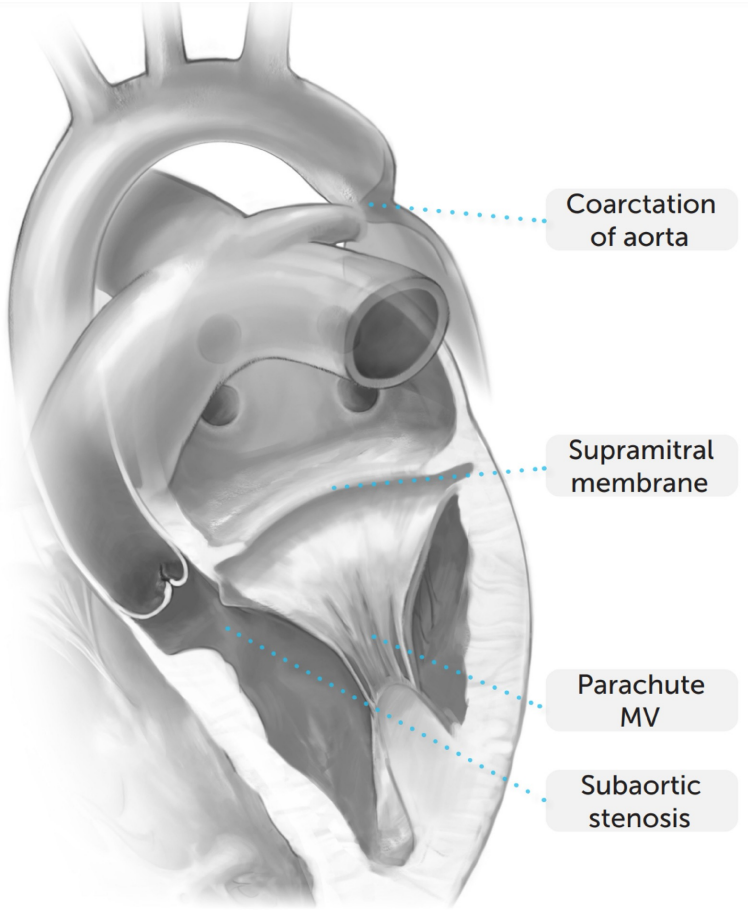
BACKGROUND

- Congenital cardiac lesions can be rare, complex, and vary in surgical management.
- **Shone's Complex** is characterized by a supravalvular mitral ring, parachute mitral valve, subaortic stenosis, and aortic coarctation.
- We present a case of a cesarean delivery in a patient with surgically repaired Shone's Complex and unbalanced partial atrioventricular septal defect (AVSD).



Courtesy of Boston Children's Hospital Heart Center

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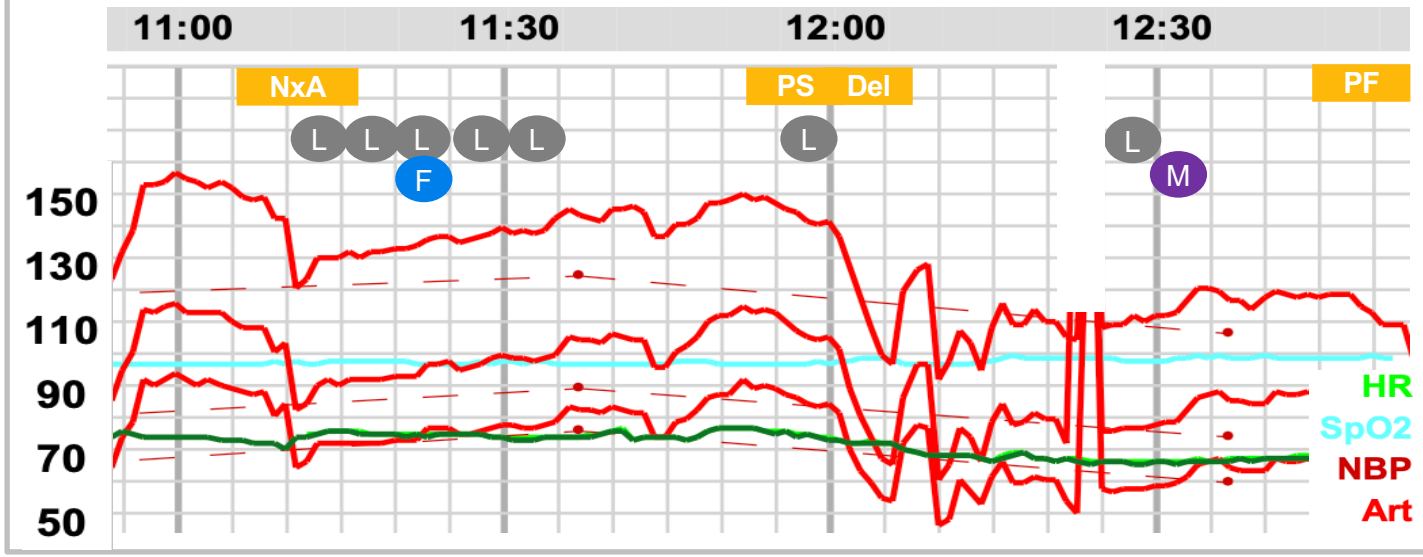
PATIENT

21yo G1P0 with Shone's Complex and unbalanced partial AVSD (s/p surgical repair, Ross-Konno procedure with subsequent RV-PA conduit replacement), admitted for worsening dyspnea at 33 weeks' twin gestation.

- **Severe RV-PA conduit stenosis**
  - RHC: RVSP 85 mmHg, systolic PAP 22 mmHg
  - TTE: peak velocity 4.1 m/s across RV-PA conduit
  - Conduit balloon dilation not indicated per OB heart team
- **Moderate MV stenosis, mild RV dysfunction**
  - TTE: mild RV enlargement; mildly reduced RVEF; LVEF 60%; parachute MV, mean inflow gradient of 5.6 mmHg
- Twin FGR
- Cesarean delivery planned at 34 wga in OB OR
- Required antepartum diuresis for hypervolemia

CASE

- Arterial line (pre-neuraxial), PIV x 2, Nasal cannula with ETCO2 monitoring
- **DPE slowly dosed** with epidural 2% lidocaine + epinephrine 1:200k (serial 2-5 mL boluses), fentanyl 100mcg, morphine 3mg (at closing)
- Hemorrhage due to uterine atony; improved with IV oxytocin gtt, IM carboprost
  - IV phenylephrine gtt, 1.1L crystalloid, 25g albumin (OR); 2 units pRBCs (PACU)
- Discharged on POD 4 with improvement in dyspnea
  - Pending further cardiology evaluation of RV-PA conduit stenosis at 4 months postpartum



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DISCUSSION

- Parturients with congenital cardiac lesions are **high-risk, despite repair.**[1] Perioperative management requires multidisciplinary planning.[1,2]
- **Slowly-dosed DPE** allowed us to avoid decreases in SVR and spikes in PVR, while ensuring adequate anesthesia.

Anesthetic Management for RV Outflow Tract Obstruction:[3]

1. **Ensure gradual neuraxial onset** to avoid abrupt hemodynamic shifts.
2. **Avoid hypotension** – use judicious fluids and vasopressors if needed.
3. **Minimize increases in RV afterload** – maintain oxygenation, normal CO_2.

References
1. Hussey H, Hussey P, Meng ML. Peripartum considerations for women with cardiac disease. *Curr Opin Anaesthesiol.* 2021 Jun 1;34(3):218-225.
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3. Meng ML, Arendt KW, Banayan JM et al. Anesthetic care of the pregnant patient with cardiovascular disease: A scientific statement from the American Heart Association. *Circulation.* 2023 Mar 14;147(11):e657-e673.