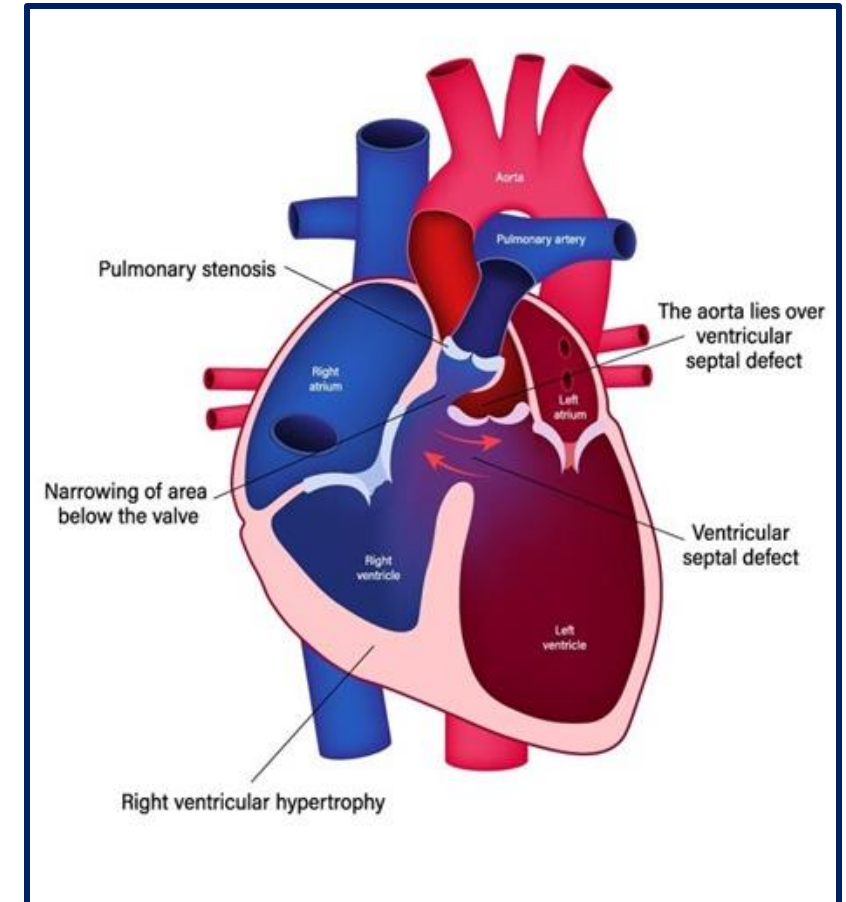


## BACKGROUND

- Tetralogy of Fallot (ToF) is a congenital cardiac anomaly characterized by pulmonary stenosis, VSD, overriding aorta, and right ventricular hypertrophy.
- Condition occurs in 3-5 per 10,000 live births and makes up 7%-10% of all birth defects (1)
- Repair often occurs early in life and patients exhibit excellent survival into reproductive years
- ToF related sequelae experienced during pregnancy can contribute to higher risks of intrapartum complications (1)
  - Pulmonary stenosis and/or regurgitation
  - Poorly tolerated arrhythmia leading to hemodynamic instability
  - Impaired ventricular function
  - Unrepaired ToF with cyanosis
- Vaginal delivery is an option for these patients with special consideration for mode of delivery given in those with active decompensated heart failure in which labor would not be tolerated
- High risk patients require a comprehensive anesthetic plan that accounts for the hyperdynamic cardiovascular state of pregnancy and physiologic changes that occur during delivery (2)



1. Garagiola, M. L., et al. Pregnancy considerations in tetralogy of Fallot. CJC pediatric and congenital heart disease. 2023
2. Thakur, S., et al. Challenges and outcomes of pregnancy in an uncorrected tetralogy of Fallot with pulmonary atresia and major aorta-pulmonary collateral arteries (MAPCA): A case report - the egyptian heart journal. SpringerOpen. 2023
3. *Tetralogy of Fallot*. British Heart Foundation. (n.d.). <https://www.bhf.org.uk/information-support/conditions/tetralogy-of-fallot>

## CASE REPORT

- 28 yo G1P0 at 34w6d presented for preterm IOL secondary to repaired maternal ToF with high risk factors and dichorionic-diamniotic twin gestation
- Risk factors included recent endocarditis, right heart failure, severe pulmonary valve stenosis s/p valvuloplasty at 12wga, and episodic supraventricular tachycardia
- Anesthetic plan included arterial line placement for hemodynamic monitoring and early epidural placement to mitigate the sympathetic surge that occurs with labor
- After confirmation of appropriate cessation of anticoagulation, epidural was placed successfully without hemodynamic instability
- The patient then underwent operative vaginal delivery in order to facilitate an assisted second stage of labor. Minimal maternal pushing effort was allowed in order to avoid maternal risk of extended valsalva.
- Successful forceps delivery of both Fetus A and Fetus B performed
- Patient remained hemodynamically stable throughout delivery and was discharged on PPD4
- Patient returned 5 days later with postpartum hemorrhage requiring suction D&C under GETA, transfusion of blood products and placement of JADA
- Patient was discharged on POD2. Four months later, the patient underwent pulmonary valve replacement without complication.

## DISCUSSION / TEACHING POINTS

- This case evaluates the complexity of anesthetic peripartum care in a patient with repaired ToF, recent endocarditis, right heart failure, and pulmonic stenosis
- Patients experiencing high risk sequelae in relation to ToF at the time of labor require consideration of invasive hemodynamic monitoring and access in the forms of arterial monitoring and central venous access (2)
- Anesthetic plans included
  - early analgesia to control tachycardia and right heart strain
    - Epidural anesthesia can control up to 95% of pain and ameliorates hemodynamic changes and decreases adrenergic response to pain (1)
  - Goal of euvolemia
  - Close hemodynamic monitoring
  - Preemptive pharmacologic agent selection in the event of instability
- This case examines the need for meticulous multidisciplinary planning with regards to caring for laboring patient with ToF and highlights the complications that can occur postpartum in the anticoagulated, CHD patient

1. Garagiola, M. L., et al. Pregnancy considerations in tetralogy of Fallot. CJC pediatric and congenital heart disease. 2023
2. Thakur, S., et al. Challenges and outcomes of pregnancy in an uncorrected tetralogy of Fallot with pulmonary atresia and major aorta-pulmonary collateral arteries (MAPCA): A case report - the egyptian heart journal. SpringerOpen. 2023