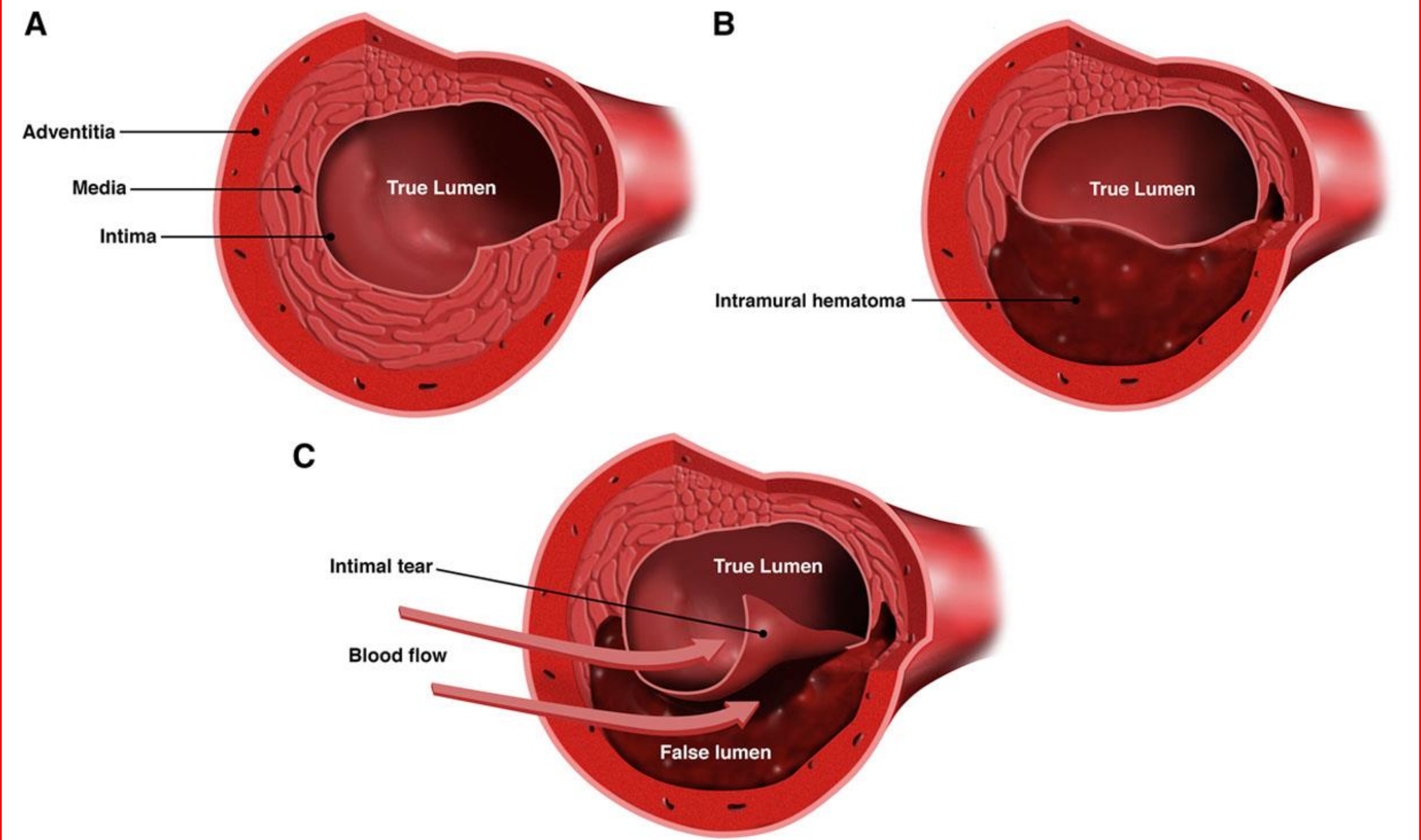


Introduction

Heart failure is the leading complication of cardiac disease in pregnancy¹ and according to the MBRRACE report from 2023, cardiac disease is the second most common indirect cause of maternal death.

Spontaneous Coronary Artery Dissection²

- Spontaneous, atraumatic separation of the coronary artery wall
- Most prevalent in middle aged women (87%-95% of SCADs)
- Most common cause of myocardial infarction in pregnant women – oestrogen affects the microvasculature and reactivity of the coronary vessels. Combined with the haemodynamic changes that occur, there is increased shear stress on the vessel walls
- Risk factors: exogenous hormone use, physical and emotional stressors, pregnancy, some inflammatory and connective tissue disorders
- Diagnosed with coronary angiography
- Management can be conservative, medical or interventional
- Cardiac rehabilitation is necessary



The mother

A 29-year-old woman presented early in an unplanned pregnancy, with a background of heart failure following a myocardial infarct and cardiac arrest secondary to a spontaneous coronary artery dissection (SCAD) less than 2 years prior to conception. She has an implantable defibrillator in situ.

First trimester

- Her CARPREG II score was 7 at the time of her first assessment. (45% risk of arrhythmia, heart failure, thrombosis or death in pregnancy).
- Early in pregnancy she had an episode of ventricular fibrillation overnight that triggered the ICD.
- She was counselled regarding the risks of continuing with the pregnancy, particularly the risk of worsening heart failure after 20 weeks, recurrent ventricular arrhythmia and recurrent coronary artery dissection. Termination of pregnancy was discussed but declined.

20 weeks

She was counselled in the High Risk Anaesthetic Clinic including risks of ventilatory or cardiac support and ECMO. Patient aware that RA and GA for delivery could precipitate a further deterioration in her cardiac function.

22 weeks onwards

She deteriorated clinically and severe IUGR was identified on ultrasound. She was admitted to Labour Ward HDU for strict fluid balance monitoring, diuresis and close fetal monitoring. Her pregnancy was continued until there was significant concern about fetal risk from any further prolongation.

26 weeks

A baby girl weighing 562g was delivered by LSCS. An incremental CSE was performed (intrathecal heavy bupivacaine 5mg with 300mcg diamorphine, followed by 75mg of 0.5% levobupivacaine in 5ml increments epidurally). Sensory anaesthesia was achieved in 52 minutes. She remained cardiovascularly stable throughout. She was admitted to ICU for 24 hours and then returned to Labour Ward HDU. After 8 days, the patient was discharged home.

The baby

The baby was discharged from NICU on day 86 of life at a corrected gestational age of 38+5/40, having received 5 weeks of CPAP and 4 weeks of HFNO. She had multiple admissions for recurrent bronchiolitis but to date has achieved normal milestones of development.

Discussion

- MDT care and shared decision-making involving the patient is essential for optimal outcomes.
- To prevent further myocardial oxygen demand in a patient with minimal cardiac reserve, an incremental CSE technique was used and enabled CVS stability throughout.
- Family planning should be discussed with all women of childbearing age in specialty clinics, including advice about effective contraception.

References

1. Bright RA, Lima FV, Avila C, Butler J, Stergiopoulos K. Maternal Heart Failure. J Am Heart Assoc. 2021 Jul 20;10(14):e021019. doi: 10.1161/JAHA.121.021019. Epub 2021 Jul 14. PMID: 34259013; PMCID: PMC8483466.

2. Agwuegbo CC, Ahmed EN, Olumuyide E, Moideen Sheriff S, Waduge SA. Spontaneous Coronary Artery Dissection: An Updated Comprehensive Review. Cureus. 2024 Feb 27;16(2):e55106. doi: 10.7759/cureus.55106. PMID: 38558647; PMCID: PMC10979520.