Mechanical Aortic Valve Thrombosis in Pregnancy-Anticoagulation Considerations

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Background

- Mechanical aortic valve thrombosis is a rare and life-threatening condition that can be exacerbated by the hypercoagulable state of pregnancy.
- Optimal anticoagulation regimens in these cases are not well defined and have implications for maternofetal safety as well as anesthesia for cesarean section¹.

Case Events

- 39YO G3P1011 with hx of malalignment VSD, coarctation of the aorta, and PDA s/p repair in childhood c/b development of subaortic stenosis and aortic regurgitation requiring subaortic resection and mechanical aortic valve placement in 2003.
- 27 WGA with dyspnea and chest pain and was found to have acute heart failure 2/2 mechanical aortic valve thrombosis causing severe AS/AI
- Gupta, R., Ranchal, P., & Harburger, J. (2019). Mechanical Valve Thrombosis in a Pregnant Patient: A Case of Therapeutic Failure. *Cureus*, *11*(9), e5615. <u>https://doi.org/10.7759/cureus.5615</u>



Case Events

- Ultra-slow tPA infusion was initiated per the PROMETEE trial²
- Thrombus resolved, baseline heart function was restored
- Heparin gtt and weekly echocardiograms
- Two weeks later she developed a Mobitz type 2 AV block and thrombus re-formed
- She underwent two more rounds of tPA and a temporary pacemaker was placed once the thrombus resolved
- C-section was performed under GETA in the CVOR on full dose heparin
- Postoperative course was c/b a severe rectus sheath hematoma (s/p IR embolization x2) and 3rd degree AV block
- Permanent pacemaker was placed, and the patient was discharged home
- After some time in the NICU, the infant was discharged home. Unfortunately, he passed away at 6 weeks old from an unknown cause





Learning Points

- Thromboembolic complications occur in up to 15% of patients with mechanical heart valves while using LMWH during pregnancy.
- The treatment modalities include valve replacement, thrombolytic therapy and surgical thrombectomy.
- Like non-pregnant patients, anticoagulation is recommended for non critically ill patients, and surgery is recommended for failure of anticoagulation or for critically ill patients with obstructive thrombosis.
- Thrombolytic therapy is considered to be a relative contraindication in pregnancy due to maternal and fetal risks of hemorrhagic and thrombotic complications.
- However, in the rare event of prosthetic valve thrombosis, ultra-slow tPA administration is an effective therapy which may be safer than cardiac surgery^{3.}
- It cannot be ruled out that exposure to anticoagulants in utero could have been a contributing factor to this unfortunate neonatal outcome.

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