

Anesthetic Management of Acute Type A Aortic Dissection in a 27-Week Pregnant Patient

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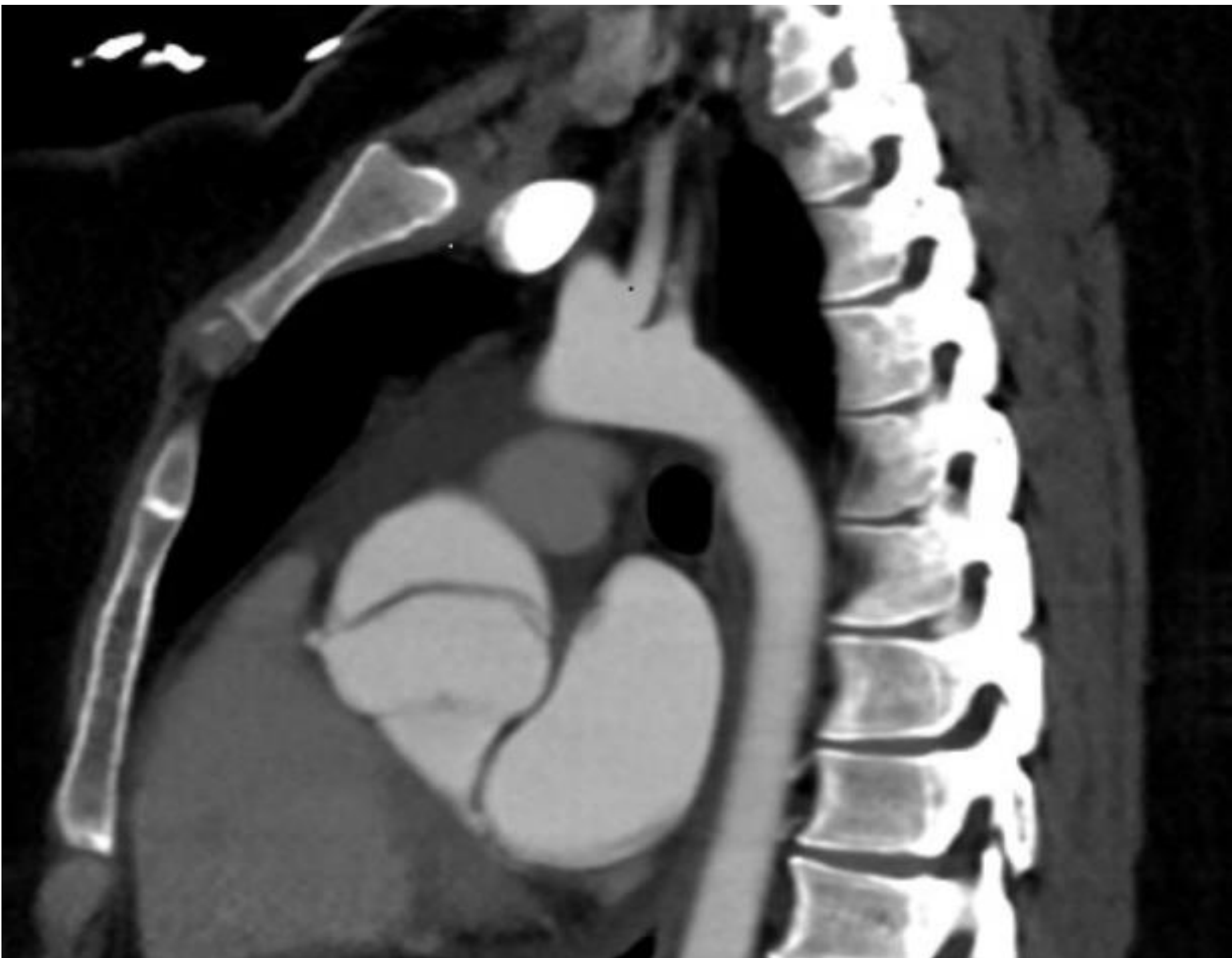
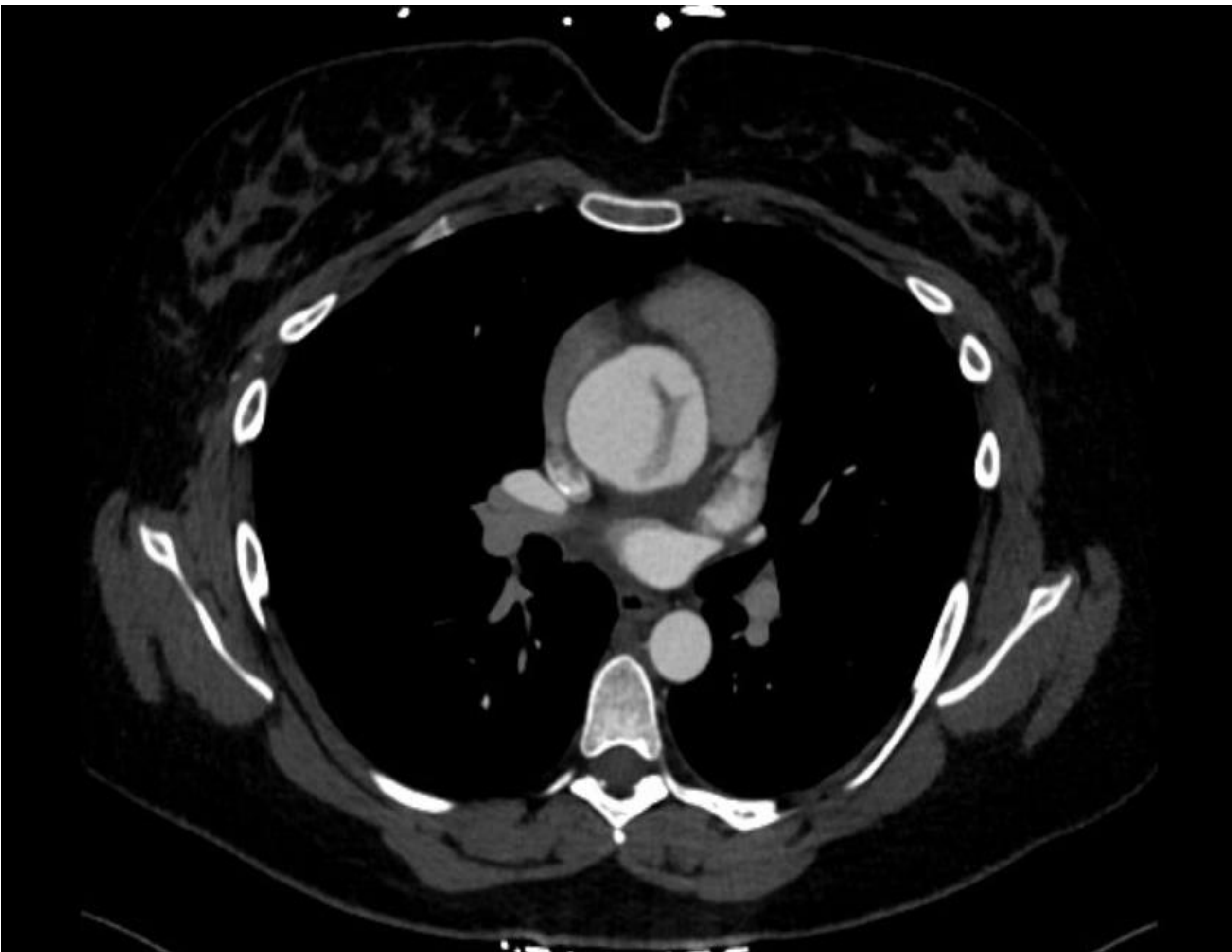
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Introduction

- Aortic dissections are a rare complication during pregnancy but pregnancy is associated with an increased risk of aortic dissection.
- Aortic dissections are most likely to occur in the third trimester of pregnancy due to elevated levels of hormones such as progesterone and relaxin.
- Risk is elevated in patients with certain underlying conditions such as Marfan syndrome with an eight-fold increase in risk.
- This case report describes the anesthetic management of a 26-year-old woman who was 27 weeks pregnant with a history of Marfan Syndrome and presented with a Type A aortic dissection.

Case Description

- HPI: 26-year-old pregnant woman (G2P0010) at 27 weeks and 1 day with a past medical history of Marfan Syndrome complicated by an aortic root aneurysm and mild mitral valve prolapse presented to the ED with acute, intermittent, sharp, non-radiating L-sided chest pain that persisted for 3 days and became more constant in the hours prior to arrival. Notably, patient was in a low impact MVA 8 days prior. Echo done 8 months prior showed aortic root of 4.1 cm and ascending aorta at 3.7 cm. Echo done 5 days prior showed aortic root of 4.3 cm and ascending aorta at 4.1 cm. Chest MRA was done due to the increase in size and it showed aortic root of 4.0 cm and ascending aorta at 3.6 cm, which was unchanged from prior MRA in 2022.
- Imaging: CT angiogram revealed a dilated aortic root and ascending thoracic aorta with a focal dissection along the aortic root and ascending aorta, extending to the left coronary artery. There was also the possible development of a pseudoaneurysm along the L aortic wall.



Clinical Course

- Emergently taken to the OR where she was induced with 20 mg etomidate, 100 mg fentanyl, 100 mg rocuronium and 100 mg of lidocaine
- Maintained with isoflurane gas
- Cesarean section occurred and a 2 lb 3.5 oz F was removed from the uterus with Apgar scores at 1, 2 and 3.
 - Hemodynamics maintained with esmolol, phenylephrine, vasopressin and fentanyl
- Given 0.2 mg of methergine and hemabate after delivery due to poor uterine tone and to prevent uterine bleeding in the setting of full heparinization for cardiopulmonary bypass
- Aortic dissection repair occurred and hemodynamics maintained with norepinephrine, phenylephrine, vasopressin and esmolol
- Sternum was closed with staples, then abdomen was closed

Discussion/ Conclusion

- There are no established practice guidelines for repairing aortic dissections in pregnancy.
 - Performed the Cesarean section at 27 weeks and 1 day due to the potential risk of fetal loss from uterine contraction, placental hypoperfusion, and fetal hypoxia when undergoing cardiopulmonary bypass
- Women at high risk for an aortic dissection during pregnancy should receive preconception counseling.
 - Beta blocker use is recommended for those at high risk to lower risk of aortic dissection
- Women with a dilated aortic root >4.0-4.5 cm, a history of connective tissue disease, a family history of aortic dissection, and/or indications for surgical aortic valve replacement should consider surgical interventions before conception.

Outcomes

- Five days post-surgery, the patient developed a fever, tachycardia and leukocytosis → found to be endometritis → treated with IV metronidazole, clindamycin and gentamicin for 48 hours
- CT PE showed a 1.4 cm outpouching arising from the brachiocephalic artery likely from cannulation but pseudoaneurysm formation cannot be excluded
- Patient discharged on post-op day 8 in stable conditions
- At 6-week follow up, patient is doing well
- Her infant is doing well at the local pediatric hospital NICU 6 weeks post Cesarean section

References

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