Cesarean delivery in a patient with severe aortic stenosis secondary to bicuspid aortic valve in need of concomitant aortic valve replacement

Kendra Brown MD, Alice O'Brien MD

Introduction

- Bicuspid aortic valve (BAV) is a cardiac malformation that occurs in 1-2% of the population with (AS) being the most common associated valvulopathy**[1]**.
- Parturients with severe aortic stenosis (AS) can have declining cardiac function in the 3rd trimester and are at risk for preterm delivery.
- Pregnancy related changes will exacerbate this underlying condition often requiring intervention**.**

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Case Report

- 27-year-old G1 with congenital AS secondary to BAV, coarctation of the aorta, history of balloon angioplasty of her aortic valve at 18w due to shortness of breath (SOB), presented with worsening symptoms at 32w.
- TTE: LVEF of 48-50% and severe AS.
- Elective cesarean delivery (CD) and concomitant aortic valve replacement (AVR) was immediately scheduled
- The patient expressed a strong desire to be awake during the CD knowing her risks of morbidity/mortality with cardiac surgery.
- It was decided to perform the CD under an epidural and no spinal, due to severe AS.
- An epidural was placed 24h prior to CD to minimize risk of traumatic placement the day of surgery.
- Plain normal saline was infused through the catheter for patency.
- Traumatic placement would still allow for full heparinization required for the AVR based on ASRA guidelines.
- If surgical anesthesia could not be obtained for the CD, GETA would be planned to avoid concerns with heparinization
- In the OR an awake arterial line was placed and the epidural catheter was slowly infused with 2% lidocaine without epinephrine.
- The CD was performed without complications.
- The patient did endorse chest pain after delivery and her blood pressure dropped with surgical blood loss. This was treated along with her anxiety and symptoms improved.
- She was observed in the cardiac ICU after delivery and underwent an uncomplicated AVR 6 days later.

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Discussion

- Cardiovascular disease and valvulopathies are a major contributor to morbidity and mortality in the obstetric population.
- In cardiothoracic surgery it is desired to have postoperative epidurals for pain control and reduced risk of pulmonary complications**[2].**
- A similar practice can be applied in the high risk cardiac obstetric patient.
- To balance the risk of epidural hematoma, it is important for anesthesiologists to consider placing epidurals 24hrs prior for inpatients.

References

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2. Landoni G et al., Benefits and risks of epidural analgesia in cardiac surgery, *BJA: British Journal of Anaesthesia*, Vol. 115, Issue 1, July 2015, Pages 25–32, https://doi.org/10.1093/bja/aev201.