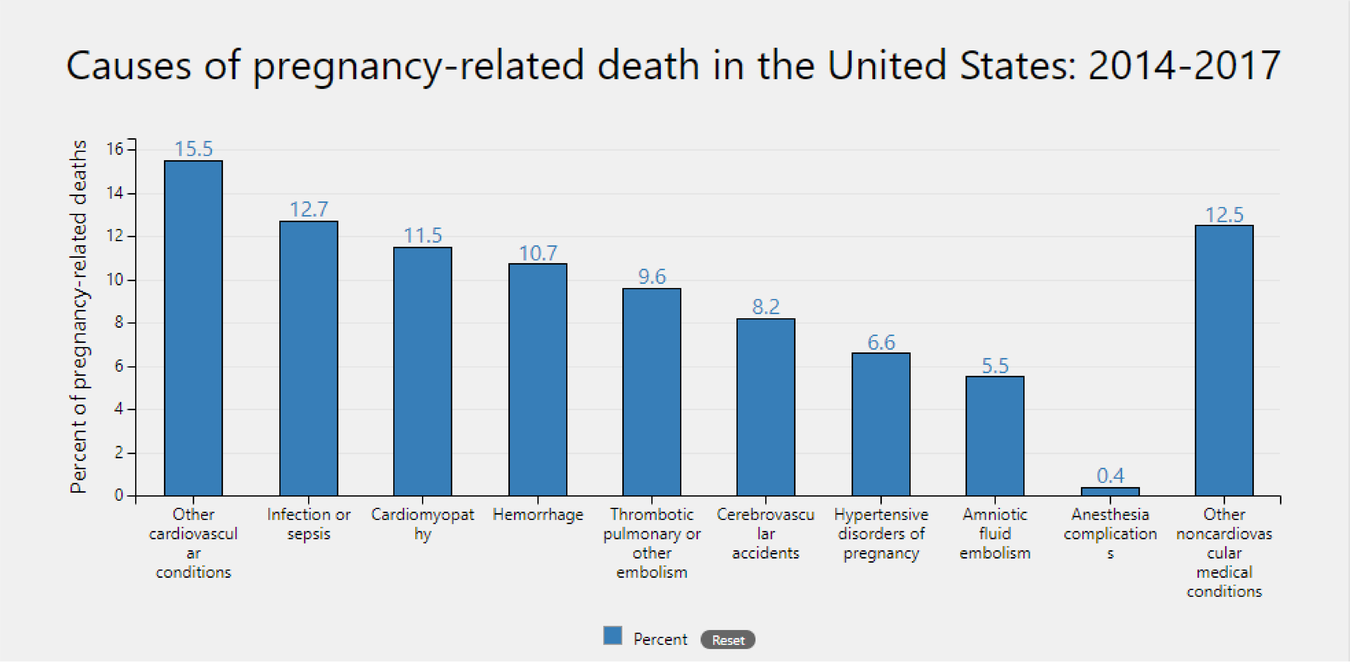
Cesarean Delivery of Patient with Peripartum Cardiomyopathy with Pulmonary Hypertension

SOAP 2022 Presentation, Chicago, IL

Guice C, Harrell J, Russo M

INTRODUCTION

- Cardiac disease is one of leading causes of M+M of parturients in U.S
- Cardiac disease more likely to be encountered at tertiary referral centers- however, this population will present in community setting
- Deliveries increasing for women with cardiomyopathies and pHTN, putting them at risk for major adverse cardiac events



CDC Pregnancy Mortality Surveillance System

https://www.cdc.gov/reproductivehealth/maternal-mortality/pregnancy-mortality-surveillance-system.htm

References:

Bauersachs J. Pathophysiology, diagnosis and management of peripartum cardiomyopathy. Eur J Heart Fail. 2019 Jul;21(7):827-843

Collier AY, Molina RL. Maternal Mortality in the United States: Updates on Trends, Causes, and Solutions. Neoreviews. 2019;20(10):e561-e574

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CASE (PREOPERATIVE)

- A 32 year-old female G3P0111 at 31 5/7 WGA presented as a transfer for obstetrical and heart failure management.
- Medical problems:
  - multiple VTE on therapeutic enoxaparin with a PFO
  - previous CVA in 2020 with residual left sided partial paralysis and ataxia with falls,
  - peripartum cardiomyopathy with an ICD with HFrEF with pHTN on most recent TTE
  - OSA with obesity
  - Bipolar I disorder
  - Domestic abuse victim with housing instability
- On arrival, she was continued on furosemide and metoprolol for management of HF, continued on enoxaparin for anticoagulation and placed on continuous fetal monitoring
- A TTE was performed which showed a decreased EF of 25% and SPAP of 49 mmHg with diastolic dysfunction suggesting worsening cardiac function. Decision made to transfer patient from the obstetrical hospital to the cardiac critical care unit for closer monitoring after episodes of SVT were observed. Enoxaparin was held for over 24 hours prior to planned C/S under neuraxial anesthesia on hospital day #6.

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References:

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CASE CONTINUED (INTRAOPERATIVE MANAGEMENT)

- Midazolam for anxiolysis
- Access/monitors: Standard ASA + radial arterial line. Access was a midline and large bore peripheral IV
- Anesthetic: dural puncture epidural performed in sitting position. Before slow dosing epidural with 2% lidocaine with 1:200000 epinephrine, low dose epinephrine and vasopressin drips were started for inotropic and afterload support. Inhaled nitric oxide at 10 ppm was administered intraoperatively after epidural placement.
- A T4 level was achieved and incision was made, with delivery of singleton fetus 11 minutes later.
- Immediately after delivery, hypotension and uterine atony was noted and treated with a bolus of IV norepinephrine and IM carboprost. No blood products were required. Epinephrine drip was needed during transport of patient to cardiac ICU. Patient was discharged 5 days later and lost to follow up.

DISCUSSION

- In patients with a severely reduced EF, carefully titrated epidural anesthesia is likely the safest method to perform a C/S.
- use of nitric oxide in pHTN
- Optimal anesthetic management can likely mitigate risk of major adverse cardiac events in this high risk patient population.

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