



ERAC-guided obstetric management of a patient with mWHO class IV dilated cardiomyopathy

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BACKGROUND

- Increasingly complex patients are presenting for obstetric care, and up to 4% of pregnant women present with cardiovascular disease. After obstetric causes, cardiovascular disease is the leading cause of peripartum mortality. (1)
- The Society for Obstetric Anesthesia and Perinatology (SOAP) developed the Enhanced Recovery After Cesarean (ERAC) protocol to provide evidence-based recommendations that optimize post-cesarean outcomes. (2)
- These guidelines may be implemented and modified to suit the specific needs of complex cardiac patients.

CASE DESCRIPTION

23-year-old G2P1001 at 34 weeks with acute on chronic dilated cardiomyopathy (ejection fraction 25–30%), class 3 obesity (BMI 51), obstructive sleep apnea, and breech presentation for repeat cesarean delivery. This patient stratified to modified World Health Organization class IV with a > 27% risk of peripartum cardiovascular event and a recommendation against pregnancy.

Pre-admission: Interdisciplinary planning and medical optimization

Anesthesia Monitors: Standard ASA + arterial line

Anesthetic: Lumbar combined spinal-epidural

Cardiovascular support: Norepinephrine + limited IVF

Post-operative analgesia:

- T10–11 bupivacaine low thoracic epidural x 36 hours
- Intrathecal morphine 0.1 mg + APAP + NSAIDs

ERAC Guidelines

Preoperative:*

- Limit fasting interval
- Carbohydrate loading
- Hemoglobin optimization

Intraoperative:*

- Hypotension prophylaxis
- Nausea/vomiting prophylaxis
- IVF optimization (< 3L)
- Optimal uterotonic administration
- Multimodal analgesia initiation

Postoperative:*

- Early oral intake
- Early and frequent mobilization
- Early urinary catheter removal
- Multimodal analgesia continued
- VTE prophylaxis
- Facilitate early discharge

Patient-specific Additions

- Interdisciplinary planning
- Symptom monitoring, serial echocardiograms
- Medication optimization

- Arterial line placed prior to neuraxial injection
- Norepinephrine infusion
- Goal-directed fluid resuscitation
- Point of care ultrasound available intraoperatively

- Continuous low thoracic epidural placed prior to incision
- Symptom monitoring for acute heart failure exacerbation
- Ongoing medication optimization
- Enoxaparin for DVT prophylaxis
- Early ambulation ensured

Patient-specific Outcome

- ACC Class 3 / NYHA Class III at time of presentation
- Lowest recorded MAP was 22% below baseline (duration <1 minute)
- Patient did not develop acute heart failure
- Preterm delivery with APGARs = 7¹, 8⁵
- Average pain score of 1.9 (over 36h)
- 22.5 MME’s utilized (over 36h)
- Ambulated to NICU to visit newborn within 24h
- Urinary catheter removed at 36 hours**

CONCLUSIONS

- The majority of SOAP-recommended ERAC elements were implemented with specific modifications as listed in the table to the left.
- The patient was discharged in excellent condition on post-op day four.
- The patient has not had a major adverse cardiac event >1 year since delivery.

REFERENCES

1. European Society of Gynecology (ESG); Association for European Paediatric Cardiology (AEPIC); German Society for Gender Medicine (DGesGM); Regitz-Zagrosek V, Blomstrom Lundqvist C, Borghi C, Cifkova R, Ferreira R, Foidart JM, Gibbs JS, Gohlke-Baerwolf C, Gorenek B, Iung B, Kirby M, Maas AH, Morais J, Nihoyannopoulos P, Pieper PG, Presbitero P, Roos-Hesselink JW, Schaufelberger M, Seeland U, Torracca L; ESC Committee for Practice Guidelines. ESC Guidelines on the management of cardiovascular diseases during pregnancy: the Task Force on the Management of Cardiovascular Diseases during Pregnancy of the European Society of Cardiology (ESC). Eur Heart J. 2011 Dec;32(24):3147-97. doi: 10.1093/eurheartj/ehr218. Epub 2011 Aug 26. PMID: 21873418.

2. Bollag L, Lim G, Sultan P, Habib AS, Landau R, Zakowski M, Tiouririne M, Bhambhani S, Carvalho B. Society for Obstetric Anesthesia and Perinatology: Consensus Statement and Recommendations for Enhanced Recovery After Cesarean. Anesth Analg. 2021 May 1;132(5):1362-1377. doi: 10.1213/ANE.0000000000005257. PMID: 33177330.



* Incomplete list, full recommendations outlined in reference #2

** Failed due to miscommunication with nursing