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Peri - Operative Point of Care Echocardiography in Obstetrics

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Ltmmc & Gh

1. Introduction

Peripartum Cardiomyopathy

- Relatively uncommon but potentially life threatening.
- Etiopathogenesis – not known
- Peripartum LV dysfunction and heart failure
- incidence is ↑↑
- Outcome is variable; Mortality is High (if EF < 30%)

Potential causes - viral myocarditis, autoimmunity, microhimerism, hormonal insults, underlying genetic factors, multiple gestation, multifetal pregnancy, pre - eclampsia

2. Case Report

22yr/F $G_4P_2A_1L_2$ with previous 2 LSCS uneventful with newly diagnosed gestational hypertension admitted for elective LSCS for short inter - conception period.

- No premonitory symptoms;
- **Asymptomatic** for any cardio - respiratory complaints
- Patient was conscious oriented with P - 88/min, BP - 130/80mmHg, Spo2 - 99% on room air. RS - AEBE clear. Pre - op Hb - 10.3gm%.
- Patient on Tb Labet 100mg OD since 4 days
- Standard SAB given with 2cc 0.5% hyperbaric bupivacaine with spinal level fixed at T6.
- Gradually patient developed **tachycardia** (HR 140 - 150) and **hypotension** not responding to IV fluids, and requiring vasopressors.
- After baby delivery, patient developed **tachypnea with desaturation** (SpO2 – 88 - 90 % on room air) + intermittent cough; Bilalteral basal crept → O2 supplementation (simple mask– NRBM – CPAP – ETT with 100% O2) not responding to IV Furosemide
- High Index of suspicion for pulmonary edema secondary to ?
- Bedside 2D Echo: **1) LV dilated and thinned out**

2) Contractility of LV ↓↓↓
3) RV normal
4) f/s/o PPCM

3. Further Management

2D Echo findings confirmed with the cardiologists:

- Dilated left ventricle without hypertrophy
- Global left ventricular hypokinesia; EF - 15% - 20%
- Normal RV dimensions and pulmonary pressures
- No structural abnormality +

Based on the clinical picture: D/D - pulmonary edema secondary to severe pre - eclampsia, pre - existing congenital/valvular heart disease, peripartum or pre - existing cardiomyopathy, myocardial infarction, anemia, acute pulmonary embolism or amniotic fluid embolism

Intra - op focused 2D echocardiography could differentiate b/w these conditions and diagnosis of PPCM could be made by exclusion and echo findings

Post - op patient shifted to cardiac ICU for further Mx:

Mechanical ventilation, ionotropic support (NA & Dobutamine) diuretics, β *b*lockers on hemodynamic stability, heparin, bromocriptine

Regular 2D echo monitoring of ejection fraction in ICU
On POD6 patient d/s with improving cardiac function.

4. Discussion

- Delayed recognition of PPCM particularly with very low EF contributes to ↑↑ mortality
- High index of suspicion: peculiar clinical findings of - hypotension requiring ionotropes, desaturation requiring O_2 is required for early diagnosis of obstetric cardiac conditions.
- **Focused 2D echocardiography** requires basic level of competency but can provide a **rapid non - invasive assessment** of the cardiovascular system and **help solve diagnostic challenge**.
- A multidisciplinary approach involving peri - operative knowledgeable anesthetist, obstetrician, and intensivist is crucial for the management

5. Conclusion

- Based on the patients clinical picture, intra - op echocardiography performed in time by the attending anesthetists could establish the cause as PPCM and appropriate management for heart failure could be initiated without delay which proved life saving for the patient.
- **Optimal use of POC echocardiography** helps in early diagnosis of maternal cardiac conditions and should be made available.
- **Formal training in focused 2D echocardiography by anesthetist must be reinforced** by ongoing maintenance of skills.

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References

[1] Griffiths SE, Waight G, Dennis AT. Focused transthoracic echocardiography in obstetrics. BJA Educ.2018 Sep; 18 (9): 271 - 276. doi: 10.1016/j. bjae.2018.06.001. Epub 2018 Jul 30. PMID: 33456844; PMCID: PMC7807974.

[2] Zahra Merzouk F, Oualim S, Sabry M. Peripartum Cardiomyopathy: The Hidden Enemy [Internet]. Cardiomyopathy - Disease of the Heart Muscle. IntechOpen; 2021. Available from: http: //dx. doi. org/10.5772/intechopen.97610

[3] Arany Z, Elkayam U. Peripartum Cardiomyopathy. Circulation.2016 Apr 5; 133 (14): 1397 - 409. doi: 10.1161/CIRCULATIONAHA.115.020491. PMID: 27045128.

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