

Combined Spinal Epidural Anaesthesia for Caesarean Section in a Parturient with Dilated Cardiomyopathy

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INTRODUCTION Dilated Cardiomyopathy (DCM) during pregnancy conveys significant risk of morbidity and mortality. The aetiology of DCM in 50% of cases is idiopathic, of which 20-35% are hereditary. The prevalence of idiopathic DCM is 1 in 2500. Cardiac disease remains the largest single cause of indirect maternal deaths. Pregnancy is anticipated to be poorly tolerated in women with DCM, due to the potential for significant deterioration in Left Ventricular (LV) function as pregnancy progresses.	PREOPERATIVELY • 2 units Xmatch RCC confirmed, Prophylactic LMWH discontinued 24 hours prior. • Premedication with Metoprolol 50mg PO on morning of surgery. • Invasive Arterial Blood Pressure Monitoring, Central Venous Access & Central venous pressure (CVP) measurement observed perioperatively. • Standard ECG and pulse oximetry instituted	INTRAOPERATIVELY • Estimated Blood Loss (EBL) 400ml • Routine multimodal analgesia commenced with epidural analgesia continued for 24hours postpartum. • Patient controlled epidural analgesia (PCEA) with Levobupivacaine 0.125% + 2mcg/ml Fentanyl at 5ml/hr continuous infusion; 5ml epidural bolus as required, with 10 minute lockout period.	POSTOPERATIVELY • Postpartum monitoring in Coronary Care Unit for 48 hours • No haemodynamic compromise occurred • Invasive monitoring discontinued at 48hours postpartum • Early mobilisation & thromboprophylaxis instituted • Patient discharged home on postoperative day 5. Clinically stable at 6 weeks postpartum.
BACKGROUND Combined Spinal-Epidural (CSE), previously described for peripartum cardiomyopathy during pregnancy, can achieve rapid onset regional anaesthesia with the ability to modify or prolong anaesthesia if required. This case describes the use of CSE in a high-risk obstetric patient to achieve haemodynamic stability and effective anaesthesia for caesarean section.	COMBINED SPINAL EPIDURAL CSE Landmark Technique: L3/L4 interspace, sitting position. 'Needle-through'needle' approach. Spinal Anaesthesia: - 1.2ml Hyperbaric Bupivacaine 0.5% +15mcg Fentanyl +100mcg Preservative-free Morphine Epidural catheter inserted and secured. Epidural Analgesia: - 5ml Levobupivacaine 0.5% bolus - Supine left lateral tilt positioning Preoperative Block Assessment: - Ethyl Chloride Spray: Bilateral sensory block to T4 at 10minutes.	DISCUSSION To our knowledge, this is one of the few case reports in the literature describing the anaesthetic management of screen-detected DCM using a combined spinal-epidural anaesthesia technique for caesarean section. The use of combined spinal epidural anaesthesia has been described previously for different forms of cardiomyopathy during pregnancy, however, we believe this case describes the first use of CSE anaesthesia for caesarean section in a patient with a diagnosis of DCM and reduced EF in early pregnancy, with no cardiovascular complications in the perioperative and postpartum period. It highlights the importance of timely preoperative evaluation of the high-risk obstetric patient, detailed delivery planning with a specialist multidisciplinary team and careful titration of local anaesthesia to facilitate safe delivery by caesarean section in severe cardiac disease. Sequential CSE technique combines the reliability and symmetry of spinal anaesthesia with the gradual onset & titratability of epidural anaesthesia to minimise haemodynamic changes perioperatively.	
CASE 21 year old woman with a history of dilated cardiomyopathy presented for antenatal care to a tertiary referral maternity hospital. A transthoracic echo at 16 weeks gestation identified DCM with EF of 50% with moderately reduced Left Ventricular Systolic Function (LVSF) diagnosed. Deterioration in EF to 30% was identified during TTE at 27 weeks gestation with mild dilatation of the LV, moderate to severely reduced LVSF and EF 30%. Gestational Diabetes Mellitus (GDM) diagnosed at 28 weeks gestation, diet control modification instituted. Patient was asymptomatic, NYHA Class 1, despite having DCM, mWHO III classification, and displayed no functional decompensation during pregnancy.			Regitz-Zagrosek V et al. 2018 ESC Guidelines for the management of cardiovascular diseases during pregnancy: The Task Force for the Management of Cardiovascular Diseases during Pregnancy of the European Society of Cardiology (ESC). European Heart Journal. 2018 Knight M et al, on behalf of MBRRACE-UK. Saving lives, improving mothers’ care - Lessons learned to inform maternity care from the UK and Ireland Confidential Enquiries into Maternal Deaths and Morbidity 2017-19. Oxford: National Perinatal Epidemiology Unit, 2021.