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Introduction: Noninvasive cardiac output (CO) monitoring during cesarean delivery (CD) has been instrumental in assessing the effect of neuraxial anesthesia. Although expected to produce decreases in CO by reducing preload, neuraxial anesthesia has been associated with temporary decreases 1 and more commonly with minimal changes 2 in CO in healthy parturients undergoing CD. In preeclamptics undergoing CD, spinal anesthesia is not associated with significant changes in CO. A case of significant increase in CO, as measured by a FloTrac/Vigileo™ system, under a sequential combined spinal-epidural (CSE) technique is presented.

Case: 34 yo G5P2 at 25 3/7 with type I diabetes complicated by nephropathy, retinopathy, neuropathy, gestational hypertension, and known peptic ulcers, presented with vomiting, hematemesis, hyperglycemia (glucose 287 mg/dL) and systolic blood pressure in the 190's. The two prior pregnancies Resulted in CD for preeclampsia. Shortly after admission, flash pulmonary edema followed aggressive IV fluid therapy. A transthoracic echocardiogram (TTE) showed an ejection fraction (EF) of 50% with global hypokinesis of the left ventricle. Diuresis was started. Increasing oxygen requirements, minimal urine output and severe preeclampsia resulted in a CD. An arterial line and CO monitor were applied, and a sequential CSE was performed. Neuraxial anesthesia management, CO data and pertinent surgical times were recorded (Fig 1). Hemodynamics were stable throughout (BP 117-140/60-80 mmHg, HR 90-100 BPM). No vasopressors required. The patient delivered a healthy baby and recovered without further issues.

Discussion: In our patient with preeclampsia, diabetes and pulmonary edema, a significant (30%) increase in CO was observed with each element of a sequential CSE blockade. We suggest that the initial low EF was the result of a suboptimal CO/preload relationship; the administration of neuraxial anesthesia reduced afterload, improving cardiac performance. Monitoring CO offered a unique perspective on the effects of CSE on patients with low EF/hypokinesis and the findings show that previous observations on healthy parturients or even preeclamptics cannot be generalized to all patients. Further validation of noninvasive CO monitoring technologies, coupled with direct visualization of cardiac function (TTE), will improve understanding and patient care.

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