

# Pulmonary embolism presenting as seizure in the immediate postpartum period: a case report

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## Abstract

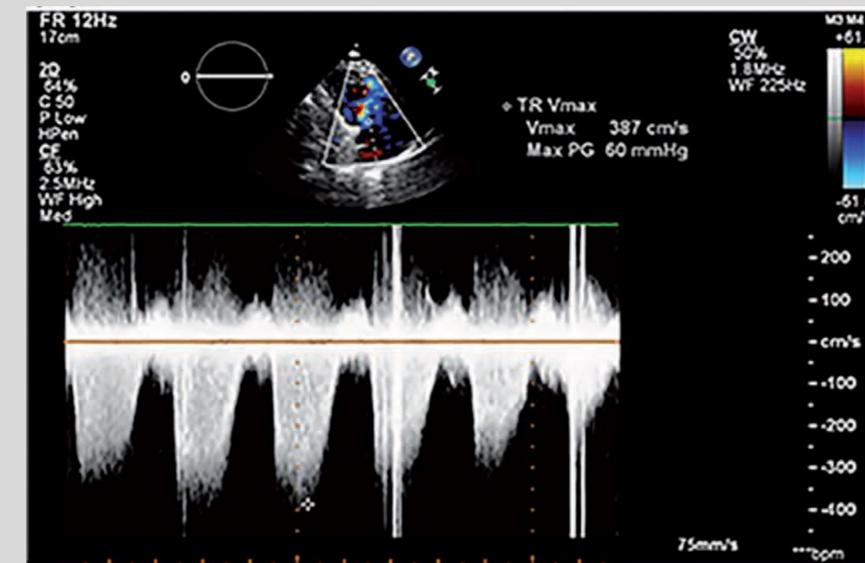
We discuss the case of a patient with massive pulmonary embolism presenting with seizures in the immediate postpartum period. The patient's course was complicated by postpartum hemorrhage and consecutive episodes of cardiac arrest. Due to the patient's critical illness and hemodynamic instability, rapid bedside transthoracic echocardiography was performed demonstrating findings consistent with pulmonary embolism. As the patient had contraindications to systemic and directed thrombolytic therapy, surgical embolectomy was successfully undertaken. Subsequently, the patient has been convalescing without any further serious events.

## Learning Objectives

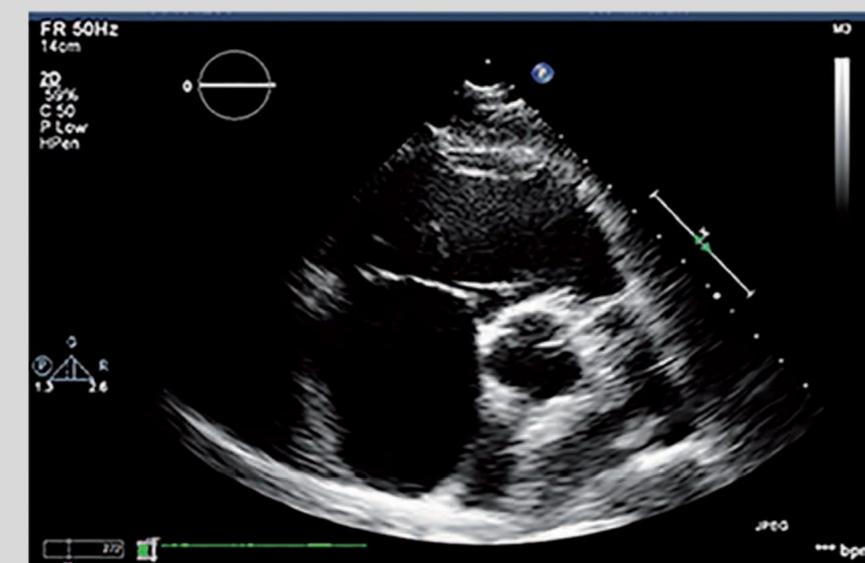
1. Recognize seizures as a presenting symptom of pulmonary embolism in parturients.
2. Interpret transthoracic echocardiogram results and identify findings consistent with pulmonary embolism.
3. Reflect on the role of surgical embolectomy as first-line treatment for massive pulmonary embolism in select patients.

## Case Report

A 33-year-old, G3P2002, African-American woman presented for scheduled induction of labor at 39 weeks' gestation, with a pregnancy complicated by malnutrition and anemia. Her history was significant for gastric bypass surgery, from which the patient achieved a normal body mass index prior to pregnancy. She did not have a current or remote history of tobacco use, pre-eclampsia, eclampsia, epilepsy or a family history of seizure disorder. Approximately 2 h after a spontaneous vaginal delivery, the patient experienced a postpartum hemorrhage, which was controlled by misoprostol and oxytocin. An hour later, she suddenly became unresponsive with development of myoclonic seizure activity. The patient was started on diazepam and fluid resuscitation, but she continued to deteriorate and went into pulseless electrical activity (PEA), for which cardiopulmonary resuscitation (CPR) measures were initiated. She was stabilized and prepared for transfer to the intensive care unit (ICU), but she again arrested with PEA approximately 5 min later, followed by CPR with return of spontaneous circulation (ROSC). During transport to the ICU, the patient arrested for a third time with PEA, and CPR was resumed until ROSC was achieved. Bedside TTE was performed revealing dilation of the right atrium (RA) and right ventricle (RV); severe tricuspid regurgitation (TR) and pulmonary hypertension; right ventricular dysfunction and an echodense lesion in the pulmonary artery, suggestive of acute saddle PE (Figure 1). As she had undergone a recent vaginal delivery and had experienced chest compressions, thrombolytic therapy was contraindicated. As such, she was brought to the operating room and underwent successful surgical pulmonary embolectomy with extraction of a large saddle embolus and placement of an IVC filter. A Bakri balloon for control of active uterine bleeding was also performed. The patient was started on levetiracetam to control post-hypoxic myoclonus activity (Lance-Adams syndrome) and head magnetic resonance imaging did not demonstrate any abnormalities. Anticoagulation therapy with warfarin was initiated on postoperative day (POD) 8 and was continued upon discharge. The remainder of the patient's hospital course was uneventful, and she was discharged home on POD 22. The patient returned for her postpartum examination and was well except for some memory deficits.



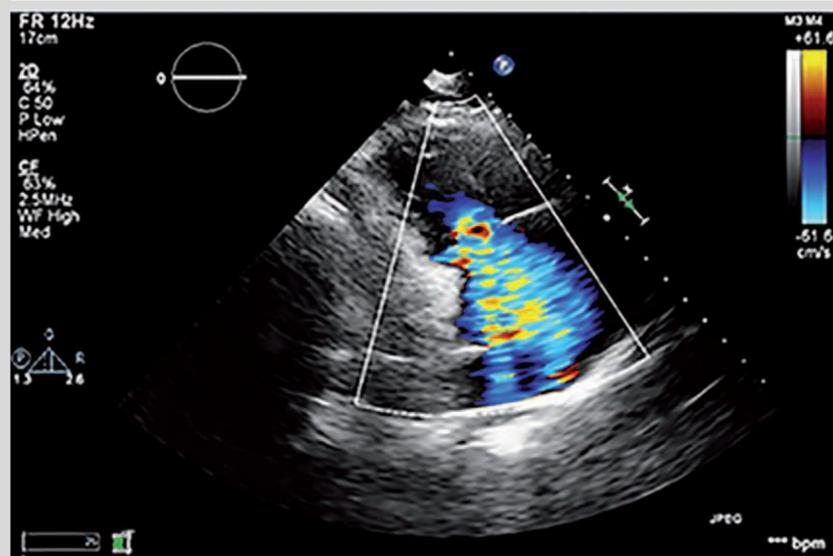
**Figure 1B.** Continuous wave Doppler can be used to measure the pressure gradient across the tricuspid valve, which is used to indirectly estimate the pulmonary artery systolic pressure. This patient's right ventricular systolic pressure is 60 mmHg plus the estimated right atrial pressure.



**Figure 1C.** Parasternal short axis pulmonary artery view showing an echodense structure in the pulmonary artery bifurcation suggestive of saddle embolus.

## Conclusion

Clinicians treating pregnant and parturient women should maintain a high level of suspicion for PE, especially in the setting of unexplained new-onset seizures. Consideration should be given for the use of bedside echocardiography in diagnosing PE in pregnancy, as well as surgical embolectomy as a possible first-line treatment for patients with acute submassive or massive PE, though further study is warranted.



**Figure 1A.** Parasternal long axis right ventricular inflow view showing severe tricuspid regurgitation.