Acute pulmonary oedema in pregnancy: an emerging diagnostic dilemma in a pregnant woman with systemic lupus erythematosus

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Background

Acute pulmonary edema in pregnancy affects 0.08% of pregnant women¹. The most frequent causes are cardiac pathology (26%), the use of tocolytics, excess fluid and preeclampsia. Other causes are severe infection and embolic events.

Systemic lupus erythematosus (SLE) can cause valvular involvement and myocarditis with clinical significance in 10% of patients and may progress to dilated cardiomyopathy and acute heart failure (AHF).

The echocardiogram allows to distinguish between noncardiac causes and differentiate the cardiac ones in valvular, systolic or diastolic dysfunction, facilitating the etiological diagnosis and therapeutic optimization.

Postoperative

After surgery the patient was transported to the Intensive Care Unit where an echocardiogram was preformed revealing a dilated left ventricle, ejection fraction (FE) of 20%, global hypokinesis, severe mitral regurgitation, non-dilated right cavities with good systolic function.

AHF secondary to SLE cardiomyopathy versus peripartum cardiomyopathy were considered.

Therapy with beta blocker, ACE inhibitors , furosemide, hydrocortisone and bromocriptine were initiated. There was no need for ventilatory support after 24h and echocardiogram performed on the 6th day revealed improvement in FE (39%).

Case Report

Admission

A 33-year-old woman, 35 weeks pregnant, obstetric index 2203, with a fetus with restricted fetal growth, which went to the emergency department with a sudden dyspnea after premature rupture of membranes.

She had a known medical history of SLE with slight involvement of the mitral valve, having abandoned follow-up consultation 5 years ago. She spontaneously stopped enoxaparin at 32nd week.

The physical examination revealed bilateral pulmonary crackles, SatO2 of 60% while breathing room air and a blood pressure of 158 / 90mmHg.

Although oxygen supplementation was started with a non rebreather mask, she remained hypoxemic. arterial gasometry was compatible with acute hypoxemic respiratory failure (type I). Cardiotocography revealed fetal bradycardia.

Therapy with unfractionated heparin, furosemide and hydrocortisone was started and emergency cesarean section under general anesthesia was performed.

During the operation it was obtained adequate ventilation and oxygenation, she maintained the hemodynamic stability and had about 500ml of hemorrhagic losses.

Discussion/Learning points

Due to physiological cardiac changes in pregnancy, women with previous heart disease are at risk for AHF.

The use of point of care echocardiography allows the orientation of the possible diagnoses such as acute pulmonary embolism, noncardiac causes, and cardiac dysfunction associated with pre-eclampsia (table 1).

We consider that point of care transthoracic echocardiography is a useful skill which allows the anesthesiologist to make therapeutic decisions.

Table 1 - Differential ultrasound diagnosis

	Systolic dysfun.	Diastolic dysfun.	Left ventricular failure	Right ventricular failure	Valvular heart disease
Peripartum cardiomyopathy	X		X		
Pre-eclampsia		X	X		
Hypertrophic cardiomyopathy		X			
Lupus myocarditis	X		X		X
Acute pulmonary embolism				X	

References

- 1 – Sciscione AC., et al. Acute Pulmonary Edema in Pregnancy. Obstet Gynecol. 2003 Mar;101(3):511-5.
- 2 – Dennis AT, et al. Acute pulmonary oedema in pregnant women. Anaesthesia. 2012 Jun;67(6):646-59.