Acute coronary syndrome in a postpartum patient with Hellp Syndrome

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I would like to declare I have no conflicts of interests.
Background

- Peripartum cardiomyopathy is a type of dilated cardiomyopathy which occurs in previously healthy women in the final month of pregnancy and up to 5 months after delivery. The incidence is low (<0.1%) but morbidity and mortality rates are high at 5% to 32%.

- Tako-tsubo (broken heart)-syndrome can occur in the postpartum period.

- Reverse takotsubo cardiomyopathy is a rare variant of classic takotsubo cardiomyopathy, but cases have been described postpartum after caesarian delivery.

Background

HELLP syndrome (hemolysis, elevated liver enzyme levels, and low platelet levels), occurs in 0.1%-0.6% of all pregnancies and in 4%-12% of patients with pre eclampsia. HELLP syndrome typically occurs between week 27 of gestation and delivery, or immediately postpartum in 15%-30% of cases.

Maternal mortality ranges from 1%-3%, with a perinatal mortality rate of 35%. Class 1 or complete HELLP is associated with the highest incidence of perinatal morbidity and mortality. Sixty percent of deaths occur in patients with class 1 disease; cerebral hemorrhage is the most common autopsy finding and cardiac arrest, myocardial ischemia can occur.
Clinical case

A 32 year old primagravida was referred to our institute at 19.30 two hours after Caesarean section for twin delivery. She had had a hypertensive crisis (180/120) with signs of left ventricular overload on her ECG.

Diagnostics on admission

- ECG. (ST depression in D11, AVF, V4-V6)
- Echocardiography showed a pericardial effusion with severe mitral insufficiency, hypokinesia of the inferior septum and base wall
- Troponin : 3.79 (cut off 0,04 ng/ml*)
- LDH : 611 rising to a peak of 1154 (range 1-250)
- D-dimer 3501: (range 0-230)
- Antithrombin III : 37 (range 80-120)
- Platelets 44 (range 140-400).

* Access AccuTnI+3 method, on UniCell Dxi 800 platform Beckman Coulter, Inc, Fullerton, USA
Clinical management:

- Intravenous nitrates were commenced plus metoprolol
- Due to the low platelet count it was decided to perform a CT coronary angiogram which showed no significant occlusions and confirmed the effusion.
- The patient appeared stable then neurological symptoms began resulting in tonic/clonic convulsions treated with intravenous diazepam,. She was intubated. A cerebral CT scan showed no pathological changes (all later neurological investigations were negative)

Reflections: The cardiac symptoms took attention away from the eclampsia which could have had serious consequences.
Clinical management:

The patient was transferred to the intensive care unit (ICU)

After a transfusion of plasma the platelet count began to rise, she was extubated after 12 hours of mechanical ventilation.

The ventricular dysfunction (injection fraction 40%) was treated with 12.5mgs of Levosimendan (intravenous infusion) and then oral heart failure medication.
Clinical management:

The ECG and echo gradually improved, the effusion which initially rose to 15mm was 6mm at discharge with no compromised function.

The injection fraction was 55% at discharge (10° day post partum) with a mild mitral insufficiency, a cardiac magnetic resonance performed pre discharge confirmed a hypokinesia of the LV base and mid portion with signs of myocardial edema suggesting a stress associated cardiomyopathy.
Organizational management:

This case involved a strong collaboration between 2 hospitals, various departments and professional disciplines. It was decided to transfer the patient post ICU (3rd day post partum) to our paediatric cardiac ward as staff were used to dealing with post partum patients in collaboration with the obstetric nurses, cardiological follow up was by the adult cardiology team.
Social and Psychological Aspects

The patient was not clinically stable enough to be transferred to the maternity unit. Her babies were brought to her room to enhance bonding and give reassurance. Her partner and own mother were allowed to stay. She required counseling explaining the high risk for future pregnancies.
Conclusions

A recently published article concludes that early post partum could present a new vulnerable group at increased risk for stress-induced cardiomyopathy (TTS)

Citro et al Is tako-tsubo syndrome in the postpartum period a clinical entity different from peripartum cardiomyopathy? J Cardiovasc Med 2013, 14:000–000
Conclusions

Guidelines from the American Heart Association recommend asking women about pregnancy complications as part of history taking and put pre eclampsia roughly on a par with a failed stress test as a risk factor.

Women with HELLP syndrome are also at increased risk of developing hypertension and cardiovascular disease.

Conclusions

Elevated blood pressure during pregnancy, regardless of type and even without known risk factors, signals high risk of later cardiovascular disease, chronic kidney disease, and diabetes mellitus. Clinical monitoring, risk factor evaluation, and early intervention could benefit women with hypertension in pregnancy.

We need to increase awareness of these problems with our obstetric colleagues in order to improve care and patient education.

Advanced maternal age has been associated with an increased risk of various complications like hypertension, diabetes.........., and increased risk for cesarean delivery.

Thankyou for your attention and thankyou very much to my interpreter.
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