

A Case of Heart Failure in the Puerperium due to Takotsubo Cardiomyopathy Complicated with Pheochromocytoma

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Background & Objective

Pregnancy and delivery are the most risk of heart failure due to circulatory load in women's lifetime. Some heart disease may cause heart failure during pregnancy period. Takotsubo cardiomyopathy usually occurs in female but very rare in pregnancy. Pheochromocytoma is estimated 1 in 15000 to 50000 pregnancies, which may cause Takotsubo cardiomyopathy.

Differential diagnosis and diagnostic approach are very important to select treatment through the case of heart failure after vaginal delivery due to Takotsubo cardiomyopathy caused by pheochromocytoma.

Result

A 38-years-old woman, gravida 4 para 3, had been uneventful during pregnancy and had normal vaginal delivery in 38 weeks, was referred to us due to heart failure. 6 hours after delivery, she had chest pain and dyspnea. Because the electrocardiogram (ECG) showed ST depression and the cardiac troponin increased, acute coronary syndrome (ACS) was firstly suspected and emergency coronary angiography was performed. All coronaries were normal but left ventriculography showed apical hyperkinetic and hypokinetic of heart base, and it was diagnosed as Takotsubo cardiomyopathy. Even carperitide, dobutamine and landiolol were started to reduce diastolic pressure, blood pressure and heart rate fluctuated dramatically immediate after imaging examination. Pheochromocytoma was thus suspected from this clinical course and was diagnosed with the ultrasonography findings of right adrenal mass.

Discussion

Contrast agent may have triggered pheochromocytoma crisis, which lead to Takotsubo cardiomyopathy and heart failure. But the first symptoms, chest pain and ST change in ECG, were typical enough to suspected ACS. The cardiac angiography confirmed intact coronary arteries and Takotsubo cardiomyopathy. Although iodine contrast agent used in angiography is contraindicated in pheochromocytoma, quick diagnosis of ACS has usually precedence. As pheochromocytoma is a rare disease and difficult in diagnosis, diverse symptoms and change of vital signs may sometimes be key to diagnosis.

Successful Pregnancy in Patient with Hypoplasia of the Thoracic and Abdominal Aorta - Case Report

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Hypoplasia of the thoracic and abdominal aorta is an extremely rare cardiovascular anomaly. The etiology is congenital, acquired, inflammatory or infectious. Symptoms occur within the first three decades of life. The patients suffer from hypertension, lower extremity claudication, and mesenteric ischemia.

Hypoplasia of the aorta may be responsible for sudden death. Surgical bypass grafting is the optimal method of treatment. A 35-year-old woman with congenital hypoplastic thoracic and abdominal aorta (treated surgically) and asymptomatic celiac trunk stenosis, was admitted to our department in the 27th week of pregnancy. Her past medical history was positive for hypertension, first noted during childhood. At the age of 27 years she underwent a surgical repair with thoracic to abdominal aorta bypass, and then blood pressure was normalized.

On admission physical examination revealed no hypertension or cyanosis, BMI 22.4 kg/m², BP 110/70 mmHg, HR 75 bpm. She didn't complain about chest or abdominal pain. An electrocardiogram showed a sinus rhythm with a heart rate of 75 bpm. ABPM was in normal limit, with mean BP 118/65 mmHg during a day and 99/53 mmHg at night. Transthoracic echocardiography showed normal cardiac chamber dimensions, preserved biventricular systolic function, no evidence of thrombus, no signs of pulmonary hypertension. A 24-hour ECG Holter monitoring showed a sinus rhythm, mean 84 bpm, max. 118 bpm, min. 68 bpm, supraventricular premature beats 13, and ventricular premature beats 8. The condition of the fetus, assessed by gynecological examination with fetal ultrasonography was normal.

The course of pregnancy was uneventful; she was monitored systematically by the cardiologist, obstetrician and angiologist. In the 37th week a cesarean section in epidural anaesthesia was performed and a healthy girl, 2700g/52 cm was delivered. APGAR was 10 at 1 and at 5 min. There was no congenital heart disease in newborn. Six months after delivery the patient remained asymptomatic.

Challenges of Long QT Syndrome in Pregnancy

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Background

Limited data and experience exists regarding the risks and appropriate treatment in pregnancy in women with Long QT Syndrome (LQTS).

Case

27 year old G1P0 at 18 weeks gestation with history of LQTS presented for routine follow up in Obstetrics Cardiology clinic. The patient denied any symptoms of syncope or palpitations but had a significant family history. Her mother has known LQTS and had a defibrillator placed. Also with 3 aunts ages 23, 28, 40 and 1 uncle age 18 who had sudden cardiac death. The patient had been treated with atenolol 50mg daily and refused defibrillator placement in 2013. She re-presented in May 2017 to establish care for her pregnancy. She was referred for genetic testing and was found to have heterozygous mutation of KCNH2 consistent with LQT2. During pregnancy her QT/QTc was 454/514ms respectively. A fetal echocardiography was performed at 22 weeks gestation which was normal. We recommended switching her atenolol to nadolol 80mg daily and she was referred to electrophysiology for further discussion and consultation regarding the indication of defibrillator implantation.

She remained asymptomatic and developed gestational diabetes and preeclampsia and had a normal spontaneous vaginal delivery of a female infant at 36 weeks and 5 days weighing 2615g (5lbs 12oz). APGAR scores were 9/9. She had no events during pregnancy. The indication for defibrillator implantation in a high risk LQTS, risk of pregnancy and choice of medications will be discussed.

Management Dilemma: Pregnancy Associated Right Atrial Thrombus

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Background

Pulmonary embolism (PE) remains a leading cause of mortality during pregnancy and postpartum. The incidence of pregnancy associated RA thrombus (RHTh) in pulmonary embolism is unknown but associated with worse outcomes outside of pregnancy. Optimal therapy is unclear. We present a patient with postpartum PE complicated by RHTh.

Objective

A 19 yo (G1P1) with sickle trait presented 16 days post emergent cesarean delivery for fetal distress with pleuritic chest discomfort and shortness of breath. She was tachycardic and tachypneic but not hypotensive. CT scan for PE showed large right mainstem, segmental and subsegmental pulmonary emboli and possible infarct of right base. TTE showed a large mobile thrombus in the right atrium (Figure 1).

Methods

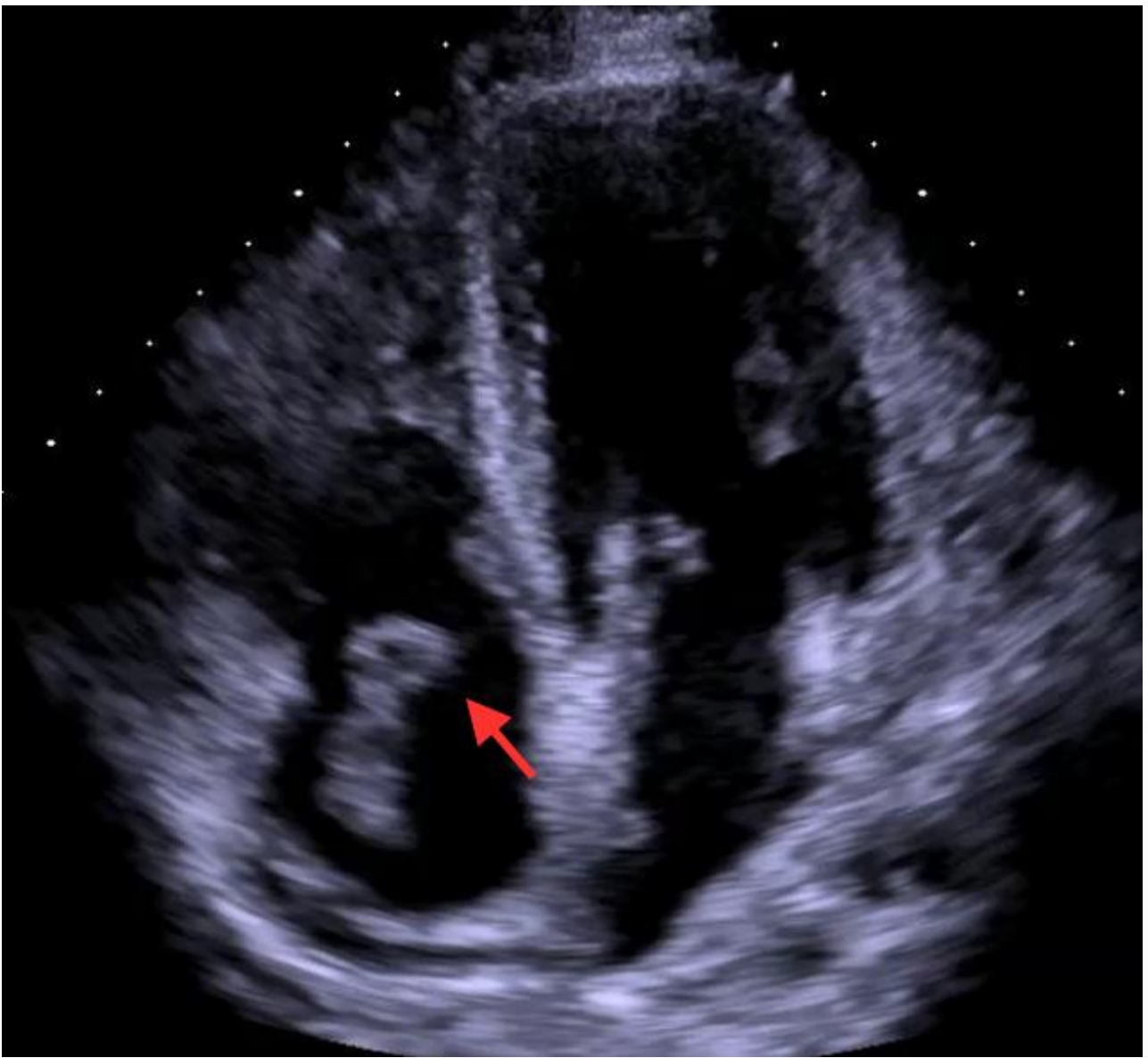
A literature review of therapeutic options in the setting of pregnancy associated massive and submassive pulmonary emboli was performed and cardiology, MICU, interventional radiology and CT surgical services were consulted.

Results

Interventional Radiology declined catheter directed thrombolysis due to concerns about dislodgement, and declined suction thrombectomy out of concern for PFO vs extra-cardiac shunting noted on TTE. Patient declined surgical removal. Decision was made to treat with heparin and systemic thrombolysis (tPA). Subsequent TTE showed complete resolution of RHth (Figure 2) and patient was discharged on Apixaban on day 3 of hospitalization. Subsequent TTE has shown normal RV systolic function and estimated PASP.

Conclusion

Anticoagulation alone may be inadequate therapy for patients with massive or submassive pulmonary embolism. Advanced interventions include systemic and directed catheter-based thrombolysis; percutaneous or surgical embolectomy and ECMO. Pregnancy has been considered a contraindication to enrollment in thrombolytic trials, but a review of thrombolytic agents used for a variety of indications showed low maternal mortality and acceptable bleeding rates and worked successfully for this patient.



Aortic Aneurysm and Dissection in Pregnancy in a Marfan Woman with BAV: Echocardiographic Findings and Review of the Literature

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Background

Aortic dissection in pregnancy is a rare life-threatening occurrence with a strong association in bicuspid aortic valve (BAV) and Marfan Syndrome, due to the involvement of connective tissue. We describe a rare case of undiagnosed ascending aortic dissection in a 22 years old pregnant affected by Marfan Syndrome and BAV and review the literature.

Objective

Basing on our experience we aim to find indications in literature about the correct management of pregnant women with Marfan syndrome and BAV and to stress the importance of monitoring these patients with echocardiography.

Methods

A 22 years old Marfan and BAV pregnant woman (36 week) experienced stabbing chest pain during labor. The ECG and blood tests were normal, but no echocardiography was made. A Caesarian section was performed without complications. Five months later a routine TTE showed a chronic Stanford Type A aortic dissection involving the aortic arch, treated by the replacement of the ascending aorta sparing the bicuspid aortic valve (David operation), combined with the replacement of the aortic arch and the supra aortic vessels.

A MEDLINE database search was made to find other cases in literature. 2010 ESC Guidelines, 2010 ACCF/AHA/AATS/ACR/ASA/SCA/SCAI/SIR/STS/SVM Guidelines and the 2011 ESC guidelines for management of cardiovascular diseases during pregnancy were reviewed.

Conclusion

Because of its rarity, pregnancy in patients with MS and BAV remains a debated topic. The 2011 ESC recommend the prophylactic aortic root replacement if the aortic root diameter exceeds 40 mm. However, this data is not in line with the European and Canadian guidelines, which report that an aortic root diameter of 45 mm is actually safe. We think that the strategy should be consistent with the stricter guidelines.

Defying the Odds: Pregnancy in a Patient with Shone's Complex

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Introduction

Shone's complex (SC) is a congenital heart disease with multiple levels of left sided cardiac obstruction of variable spectrum. SC is classified as World Health Organization class III or IV with high maternal risk, leading most women to abstain from pregnancies. There is limited data on the outcomes of pregnancies among women with SC. We describe a unique case of a patient with SC who elected to proceed with her pregnancy.

Case

A 31-year-old female with a history of SC with coarctation of the aorta repaired in childhood, moderately stenotic parachute mitral valve, and moderate-severely stenotic bicuspid aortic valve had underwent pre-pregnancy aortic balloon valvuloplasty which resultant mild AS afterwards. One month later, she suffered a cerebellar stroke with negative workup for a hypercoagulable state or arrhythmias. Despite negative blood cultures, empiric therapy for endocarditis was initiated as transesophageal echo revealed moderate-severe AS with a small echodensity on the aortic valve. As surgical consultation was planned, the patient discovered she was pregnant and opted to maintain her pregnancy. She was followed monthly in the cardio-obstetrics clinic and remained asymptomatic. At 39 weeks gestation, she was admitted electively for induction of labor and delivered a healthy baby via cesarean section due to failure of labor to progress. The post-partum period was notable for vaginal bleeding and anemia requiring blood transfusion and dilation and curettage for a retained placenta. Mother and baby were discharged home at postoperative day 5 in stable condition.

Discussion

Pregnancy in setting of SC is high risk but can be successfully managed with proper care from a multi-disciplinary team with successful maternal and fetal outcomes.

Successful Pregnancy and Delivery in Woman with Uncorrected Single Ventricle

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Patients with a single ventricle (UVH) represent a rare abnormality found in 1% of patients with congenital heart disease, often discovered during childhood. Patients with UVH rarely reach adult life and pregnancy under this condition is rarely successful.

A 26-year-old patient was diagnosed for UVH with double inlets when she was 16-year old. Surgical treatment was proposed but declined by her parents. She was free of symptoms and in a good condition with cardiac function of NYHA class I before this pregnancy. Because of the high risk associated with continued pregnancy, medical abortion was indicated in the first trimester of this pregnancy but refused by the couple. In the first trimester, the patient was in a stable condition without exercise intolerance and manual work limit. In the second trimester, her exercise intolerance was gradually increased. Upon admission (29 weeks), she had a BP of 116/71mmHg, HR of 108 bpm, and SpO₂ of 98%, sinus rhythm (ECG). Transthoracic echocardiography (TTE) revealed a single ventricle with double outlets with an ejection fraction (EF, Simpson) of 58%, severe regurgitation in pulmonic valve, pulmonary artery hypertension 70 mm Hg, atrial septal defect. Level NTproBNP was 600 pg/ml. At 32 weeks, the patient started to experience palpitations. ECG shows atrium fibrillation, the NTproBNP-level was 960 pg/ml and the EF (TTE) was 46%. C-section was performed under combined spinal epidural anesthesia with multidisciplinary team. A 1300 g boy was delivered with Apgar scores of 6/ 8.

Women with UVH have increased risk for a variety of complications. The successful outcome of this pregnancy may be associated with the preserved systolic function of UVH and an absence of rhythm disturbances throughout the pregnancy. Care by a multidisciplinary team during delivery is necessary to for a good prognosis.

A Case of “Broken Heart” in Pregnancy Due to Anaphylaxis

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Background

Takotsubo cardiomyopathy (TCM) is a rare, temporary condition that presents clinically similar to acute coronary syndrome, however without evidence of obstructive coronary artery disease. It is triggered by physical or emotional stress, and typically occurs in post-menopausal women. We present a rare case of TCM occurring in pregnancy secondary to an anaphylactic reaction to antibiotics.

Clinical Case

A 23 year-old gravida 2 para 1 Hispanic female presented for induction of labor at 37 5/7 weeks gestation for intrahepatic cholestasis of pregnancy. Shortly after administration of Ampicillin IV for Group B Streptococcus (GBS) prophylaxis, she had the sudden onset of chest pain, hypotension, and hypoxemia. She was given IV Solumedrol, IV Benadryl, and subcutaneous epinephrine for presumed anaphylaxis, however, she remained hypoxemic and hypotensive. An echocardiogram demonstrated apical hypokinesis with an ejection fraction of 35%. Laboratory testing was significant for elevated troponin level of 0.98 and brain natriuretic peptide of 500. Cardiac catheterization revealed normal coronaries. Her symptoms and vital signs improved with supportive care over the next few days. An echocardiogram performed two days later demonstrated an improvement in ejection fraction to 48% with resolution of the segmental wall motion abnormality. The patient proceeded to have an induction of labor with a cervical foley balloon and oxytocin , with vancomycin for GBS prophylaxis. She subsequently had an uncomplicated vaginal delivery.

Conclusion

TCM is a rare condition that can occur during the peripartum period. Diagnosis is made by EKG changes and echocardiographic abnormalities in the absence of angiographic evidence of obstructive CAD, and symptom resolution. Importantly, development of TCM in pregnancy does not preclude a vaginal delivery, as was seen in our case. Typically, patients with TCM make a full recovery within three to four months.

Peripartum Anesthetic Management of a Parturient with a Large Pericardial Effusion

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Background

A challenge in managing patients with large pericardial effusions is detecting signs of early tamponade physiology and preventing cardiovascular collapse. While increased blood volume in pregnancy may minimize signs of tamponade, the administration of anesthesia and the potential for hemorrhage around delivery may provoke collapse.

Case

A 37-year-old G1P0 with congenital lymphedema of her lower extremities presented for pre-anesthetic assessment at 31 weeks. Three years prior, she had percutaneous drainage of a large pericardial effusion (660mL straw-colored fluid). The effusion partially re-accumulated and she was followed conservatively. During pregnancy, she had a large concentric effusion, but was asymptomatic from a cardiac standpoint. Serial echocardiography was performed. The patient was scheduled to have an operative delivery at 37 weeks for posterior placenta Previa.

To be prepared for emergency pericardiocentesis, cesarean delivery was scheduled in a hybrid operating room. Transthoracic echocardiography was performed to evaluate the effusion prior to epidural placement (Figure). The patient was co-loaded with intravenous 5% albumin. With an arterial line in place, epidural anesthesia with 2% lidocaine with epinephrine was slowly administered to achieve a level of T4. A phenylephrine infusion was titrated to maintain her blood pressure. The surgical prep was extended to the xiphoid, and cesarean delivery proceeded smoothly. Blood loss was not excessive. Recovery was uneventful, and she continues to be monitored for her moderate chronic effusion.

Conclusion

Patients with large pericardial effusions present management challenges. The goal of detecting and treating early tamponade is paramount. Concern heightens in the peripartum period when cardiovascular instability from anesthesia, hemorrhage, and surgery may contribute to tamponade physiology. Co-loading with colloid, slow titration of regional anesthesia, and close monitoring enabled a controlled induction of anesthesia. In addition, discussions should include location of delivery, availability of cardiac personnel, and preparation for potential adverse events.

Large Acute Bilateral Pulmonary Embolus (PE) in Pregnancy

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Background

Thrombosis and thromboembolism remain the leading cause of maternal death up to 6 weeks after the end of pregnancy¹.

The most recent confidential enquiries report: MBRRACE Saving Lives, Improving Mother's Care 2016 report that 11% of maternal mortality is due to venous thromboembolism.

Case Presentation

41 years old, 2nd pregnancy, previous normal birth at term, BMI 19, admitted with uterine tightening's at 36+5 weeks. Risk factors for VTE: maternal age over 35 years and hospital admission.

Unstable fetal lie, admitted for observation. Day 3 of admission she was short of breath. Her oxygen saturations were 95% on air, other observations within normal limits. Chest examination revealed crepitation's at the right base and mild wheeze. A chest x-ray was normal and inflammatory markers were marginally raised. She was treated for a chest infection with oral antibiotics.

Two days later she desaturated to 91%, requiring oxygen. A maternal tachycardia of 100bpm was noted. A PE was suspected and she was started on treatment dose enoxaparin and sent for an urgent CTPA and echocardiogram.

The echo showed high pulmonary artery pressure. The CTPA showed large, near-occlusive filling defects in keeping with acute pulmonary emboli in the right main pulmonary artery. There was right atrial and ventricular enlargement, with some straightening of the interventricular septum, in keeping with right ventricular strain. There was also some dilatation of the pulmonary trunk relative to the ascending aorta.

Unfractionated heparin commenced. An elective caesarean section was performed after IVC filter insertion. Surgery was unremarkable with an estimated blood loss of 650mls. Admitted to cardiac intensive care.

Day 5 post caesarean section, persisting drop in haemoglobin despite blood transfusions. At repeat laparotomy there were three litres of blood in the abdomen, no identifiable bleeding point.

Warfarin commenced postnatally, discharged home on day 17.

The use of Extracorporeal Membrane Oxygenator (ECMO) for Cardiac Salvage in Patients with Cardiogenic Shock due to Peripartum Cardiomyopathy

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The use extracorporeal life support as a bridge-to-recovery in patients with acute heart failure and a potential to recovery has been described. We describe two cases of severe PPCM treated with ECMO in our department.

Case 1

A 33 years old healthy woman was admitted to the high risk ward at week 24 due to pre-eclampsia At week 27, complains of shortness of breath, normal ECG, normal echocardiogram , LVEF=60%, bilateral pleural effusion on CXR. Weekly cardiological consultations were normal.

Three weeks later (week 30) at 23:30 PM. Hypertension, acute heart failure. Mechanical ventilation and urgent caesarian section were performed. Transferred to ICCU. Hypotensive under noradrenaline drip, on CXR pulmonary edema. On echocardiogram LVEF=20%. No response to dopamine nor to milrinone, acute kidney injury, increased lactate levels. IABP inserted, followed by ECMO insertion at 6:30 AM. Four days later: Extubated, weaned from ECMO and from IABP. Hemodynamically stable. On echocardiogram normal LV function. Cardiac MRI- LVEF=55%` no late gadolinium, enhancement. Discharged home on day 7. Currently asymptomatic.

Case 2

A 23 years old patient was admitted to a regional hospital in Northen Israel on week 36 of pregnancy in acute heart failure and underwent urgent cesarean section. Echocardiogram showed a dilated LV with severe dysfunction (LVEF=20%).

Transferred to our hospital 3 weeks later due to hemodynamic instability. Arrives in deep cardiogenic shock, unresponsive to catecholamines, in metabolic acidosis and signs of acute renal failure, shock liver. Heart team decides for ECMO.

Remained 9 days on ECMO. Several trials of weaning from mechanical support failed On echocardiogram severe left and right ventricular dysfunction. Metabolic deterioration. Thrombocytopenia

On day 10 after admission: LVAD+RVAD implantation. Developed severe bleeding and left leg ischemia followed by exitus.

Conclusion: The early use of ECMO may be lifesaving in women with PPCM and severe cardiogenic shock.

A Challenging Case: von Willebrand Disease and Pulmonary Hypertension in Pregnancy

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Introduction

It is imperative to diagnose Pulmonary Hypertension (PH) in pregnancy due to the high risk of mortality at time of auto transfusion peripartum. This is a patient with von Willebrand Disease (vWD) with abnormal Chest X-Ray (CXR) sent to our Interdisciplinary Team (IDT) for evaluation.

Case

A 21 yo G1P0 at 14 wk gestation was referred to Maternal Fetal Medicine (MFM) for vWD Type 1 and an abnormal CXR, significant cardiomegaly and dilated pulmonary arteries. A repeat Echo found RV dysfunction and severe pulmonary hypertension, RVSP 67.3 mmHg, confirmed with catheterization, mean PAP 45 mmHg.

She was admitted to the CICU for IV prostacyclin's to lower her PAP prior to delivery close to 37 wk. A total of 16 days was required to optimize her PAP, maximum dose of 27 ng/kg.

Prior to her planned CD, she had acute onset of hematemesis and placement of her Swan Ganz Catheter revealed volume depletion, the vessels were found to be collapsed and insertion was a challenge. This was a prelude to HELLP syndrome and subsequent need for delivery. Five teams were present in the OR: High Risk Obstetrics, Obstetric & Cardiac Anesthesia, Cardiothoracic Surgery, Heart Failure, and Neonatology. She underwent general anesthesia due to her platelet dysfunction and inability for regional anesthesia. She delivered a healthy female neonate, Apgars 9 and 9, birthweight 3135 grams. A 5-year progesterone Intra Uterine Device (IUD) was placed immediately after delivery for Long Acting Reversible Contraception (LARC). After Delivery, the Prostacyclin infusion was down titrated while PO sildenafil continued.

Conclusion

This case is an example of how attention to subtle cardiac findings in pregnancy requires full evaluation. This case required an understanding of cardiac and obstetric pathophysiology, safety of medication use in pregnancy and during lactation to achieve a successful Maternal and Fetal outcome.

Uncontrollable Arrhythmias in a Pregnant Patient with Hypertrophic Cardiomyopathy

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Introduction

Women with HCM usually tolerate pregnancy well but complications can arise. The presence of arrhythmias is a usual complication during pregnancy and postpartum period.

Case history

A 30-year-old woman with HCM was referred to the outpatient clinic of Pregnancy and Heart Disease in a referral tertiary centre in her second pregnancy. Left ventricular outflow tract obstruction (LVOTO) with severe gradient and moderate mitral regurgitation due to systolic anterior motion of mitral valve were present at diagnosis 10 years before. A first pregnancy 6 years ago presented with heart failure in the postpartum period after a premature birth. After the first pregnancy paroxysmal atrial fibrillation appeared and was treated with amiodarone and oral anticoagulation. Biventricular pacemaker was implanted and gradients improved. However, due to persistence of symptoms septal alcohol ablation was performed twice, achieving an improvement of the LVOTO. When pregnancy was confirmed oral anticoagulation was changed into low molecular weight heparin and amiodarone was discontinued. The second trimester was characterized by the appearance of atrial fibrillation that was highly resistant to high dose beta-blockers and digoxin. Electrical cardioversion could not be performed due to left atrial appendage persistent thrombosis. In the 29th week of gestation foetal echocardiography revealed an intrauterine growth restriction with a pathological register, so urgent caesarean section was performed. Left heart failure signs appeared in the postpartum period and several new episodes of atrial fibrillation resistant to treatment appeared. The cardiac magnetic resonance showed extended myocardial fibrosis and diffuse atrial fibrosis. Finally, atrial ventricular nodal ablation was performed due to the impossibility to medically treat the arrhythmia.

Discussion

Although HCM is not considered a very high-risk disease during pregnancy, it can present with complications, and arrhythmias are a common cause of decompensation. Recurrence of arrhythmias is probable and can be difficult to control. Other markers of disease severity should be evaluated before pregnancy (fibrosis, previous complications).

Pregnancy and Management in Patients Long after Double Switch Operation for Congenitally Corrected Transposition of the Great Arteries

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Background

Double switch operation (DSO) is performed as an anatomical repair for congenitally corrected transposition of the great arteries (ccTGA), creating diversion of blood flow twice in order to place the morphological left ventricle (LV) in systemic circulation. Pregnancy in such complicated haemodynamics is still unknown.

Purpose

To know how to manage pregnancy in women after DSO.

Material and methods

Two women aged 30 years old and 25, born with ccTGA underwent DSO (Senning + Rastelli, and Mustard + Rastelli) at age of 13 and 5 respectively, and completed pregnancies were scrutinised. Medical record was used for this retrospective study.

Results

[Case 1] Prepregnancy profiles: NYHA class I, severe pulmonary regurgitation (PR), markedly dilated right ventricle (RV), impaired systolic function in RV and LV. No diastolic dysfunction in both ventricles. On carvedilol for asymptomatic non-sustained ventricular tachycardia. Pregnancy course: admission at 32 weeks to avoid deterioration of arrhythmias and clinical heart failure. Elective Caesarean Section (CS) was performed uneventfully at 34 weeks. Despite preoperative condition was under control, more arrhythmias and poor reduction of body weight in immediate-postoperative period. [Case 2] Prepregnancy profiles: NYHA class I, moderate PR, dilated RV with mild systolic dysfunction, normal LV systolic function with mildly impaired diastolic function, mild aortic and mitral regurgitation (AR, MR). Pregnancy course: admission at 28 weeks for oedema, visible heart failure with sinus tachycardia and asymptomatic NSVT. In 34 weeks, clinical heart failure with increased AR and MR appeared again, CS was done at 35 weeks. Treatment for heart failure was required after second pregnancy.

Discussion

DSO especially consists of Rastelli procedure needs attention to significant PR with dilated RV concerning diastolic dysfunction. Furthermore, RV-LV interaction might occur in such a limited geometrical condition in pregnant thorax.

Conclusion

Management of heart failure is important in pregnancy after DSO.