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Hidden in the history: A case of peripartum fulminant heart failure and cardiac arrest on a background of distant rheumatic heart disease

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Introduction

Valvular heart disease accounts for one-third of heart disease among pregnant women[1], with marked haemodynamic changes of pregnancy increasing risk of decompensation[2]. Rheumatic heart disease (RHD) is the valvular damage resulting from acute rheumatic fever (ARF). Women at high risk include those living in ARF endemic setting, Aboriginal and/or Torres Strait Islander peoples, Māori and pacific islander peoples, and women aged less than 40 years with a personal history of ARF[3]. Rheumatic heart disease associated cardiac and perinatal morbidity and mortality is particularly prevalent in first nations populations in Australia and New Zealand[4].

Case

29-year-old G3P1 pacific-islander woman, with one previous uncomplicated pregnancy, presented to a peripheral hospital at 36+3/40 with acute chest pain, tachycardia, tachypnoea and peripheral oedema on a background of previously disclosed history of acute rheumatic fever, but undetected history of childhood mitral valve annuloplasty with incomplete subsequent antibiotic prophylaxis. Chest X-ray, CTPA and bedside echocardiogram demonstrated pulmonary oedema and severe systolic dysfunction EF 11%. Patient was transferred to a tertiary facility, presenting with severe decompensated respiratory failure, prompting an emergency caesarean section for maternal indication. This was complicated by cardiac arrest shortly after uterine incision, with return of circulation after five minutes of resuscitation. A live infant was delivered. The patient was admitted to ICU and underwent right heart catheterisation and insertion of intra-aortic balloon.

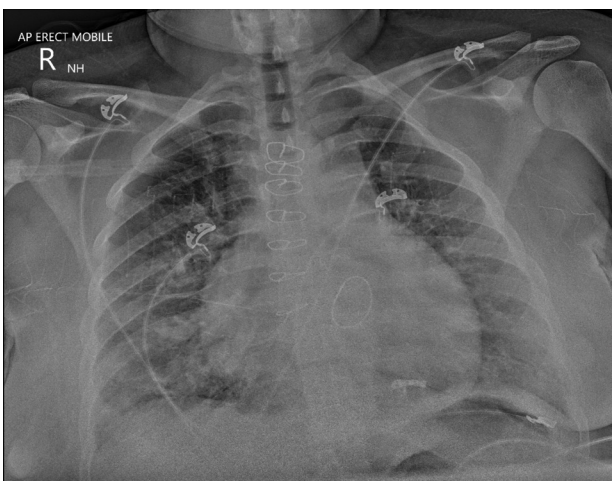

Figure 1: Chest X-ray on presentation to the emergency department demonstrating enlarged cardiac silhouette with cardiothoracic ratio of 0.57, sternal wires, previous valve replacement and features suggestive of pulmonary interstitial oedema.

Results

Systolic function significantly improved to EF 15-20% and the patient was ultimately discharged home with her baby with plan for multidisciplinary follow up. It was recommended that she receive benzathine benzylpenicillin every 28 days until the age of 40 or until 10 years of continuous therapy as per the RHD/ARF guidelines[5].

Discussion

This case of severe disease demonstrates that careful cardiac risk assessment during antenatal care is imperative to minimise maternal and fetal morbidity and mortality. VHD should be carefully managed in pregnancy, and all practitioners should maintain a high index of suspicion and perform detailed history taking and physical examination in women in high-risk populations who present with previous heart disease. Tools such as the modified World Health Organization classification of maternal cardiovascular risk (mWHO) provide reliable risk assessment and associated recommendations of level of specialist care management required for the pregnancy[6]. The clinical standard should be to establish and promote woman centred, culturally safe and multidisciplinary antenatal care pathways that support access to specialist care and investigations[5].

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