Concurrent Group A Streptococcus Infection and Peripartum Cardiomyopathy Presenting as Undifferentiated Shock: A Case Report

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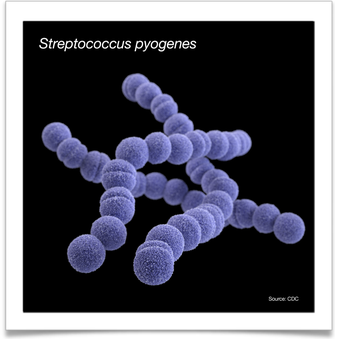

Three-dimensional (3D), computer-generated image, of a group of Gram-positive, Streptococcus pyogenes (group A Streptococcus) bacteria
Source - CDC

Case

Group A streptococcus (GAS) infection and peripartum cardiomyopathy (PPCM) are two pathologies independently associated with mortality in the postpartum population[1,2]. This case discusses BM, a previously well 35-year-old G3P2 who presented to the Emergency Department (ED) unwell with lower limb myalgias five days following an uncomplicated vaginal birth and second degree perineal tear.

Investigations

Investigations noted obstructive pattern liver function derangement, raised CRP (303, despite normothermia on presentation), and elevated BNP (2000). CT demonstrated non-specific findings of cardiomegaly, marked periportal and pulmonary oedema, and thickened gallbladder. She was administered antibiotics empirically but rapidly developed hypotension requiring ICU admission for inotropic support. Endoscopic retrograde cholangiopancreatography (ERCP) and perineal examination were performed under general anaesthetic.

Management

ERCP was negative and perineal review unremarkable. BM then deteriorated to cardiovascular arrest, which was thought to be due to possible sepsis, cardiac dysfunction, exacerbated by the general anaesthetic and lithotomy positioning causing APO/pulmonary haemorrhage. She was successfully resuscitated and required extracorporeal membranous oxygenation (ECMO). Culture of high vaginal swab subsequently grew GAS, and transesophageal echo demonstrated severe global dysfunction, with left ventricular ejection fraction of 15%. BM improved over several weeks in ICU (with good neurological recovery) with supportive therapy and multidisciplinary team care.

Discussion

This case highlights a diagnostic challenge of maternal collapse. The diagnoses of GAS toxic shock syndrome and PPCM are those of exclusion, requiring the absence of other causes of cardiac dysfunction[1,2]. PPCM is often missed because the symptoms have significant overlap with those of late pregnancy. The initial presentation for GAS toxic shock is commonly non-specific, leading to delayed diagnosis. This coupled with the aggressive nature of the infection and potential delay in the removal of the source of the infection contribute significantly to the high associated morbidity and mortality[3]. The diagnostic challenge in this case lies in whether sepsis provoked new or was exacerbated by pre-existing cardiac dysfunction. While supportive therapy for haemodynamic instability caused by these conditions is similar, targeted treatments and implications for subsequent pregnancies differ significantly.

References

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