Obstetric Anaesthesia
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Peripartum spontaneous coronary artery dissection

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Introduction

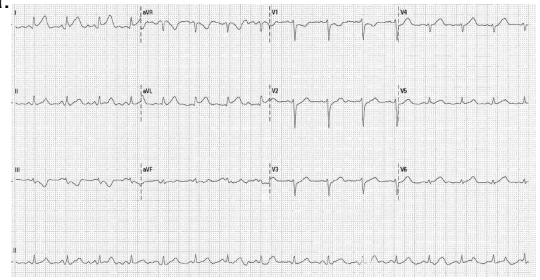
Pregnancy related coronary artery dissection (P-SCAD) is a rare, but life threatening condition which is the foremost cause of myocardial infarction associated with pregnancy[1]. We describe a case of P-SCAD following a normal vaginal delivery, diagnosed following emergency coronary angiography and treated by emergency coronary artery bypass grafting.

Case report

A 30 year old para 1[+1] with a past medical history of gestational diabetes mellitus, obesity, sciatica, anxiety and psoriasis presented following spontaneous onset of labour at 38+3 weeks gestation. She proceeded to have a normal vaginal delivery.

17:45 ~ 19 hours post delivery – onset of chest pain

a.



b.

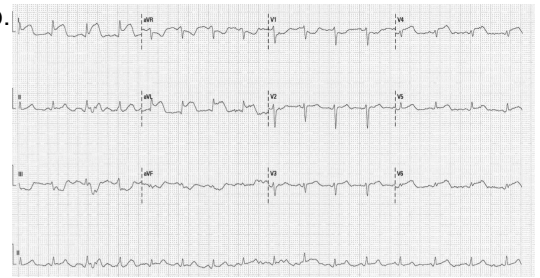
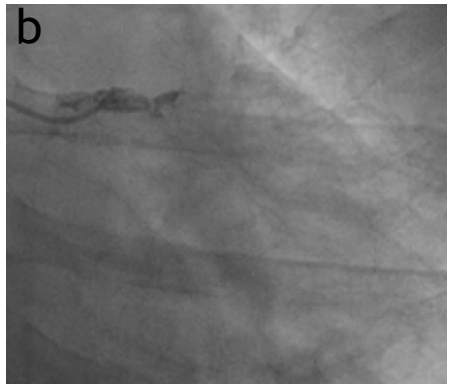


Figure 1. ECG at: a. 18:08 b. 18:28





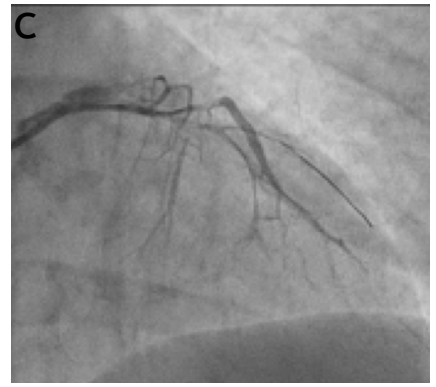


Figure 2. Angiographic findings: a. RCA, b. LMS, c. LAD post re-vascularisation

18:37 loaded with Aspirin 300mg

19:45 Arrival to cardiac catheterisation laboratory

19:50 Angiographic findings: left main stem (LMS) dissection propagating into left anterior descending (LAD) and left circumflex (LCx) artery (Fig 2a + 2b)

19:58 Loaded with Ticagrelor

21:05 Intubated due to agitation and worsening hypoxia, in extremis post intubation due to critical hypoxia

Attempted balloon angioplasty to LAD; restored some flow (Fig 2c), but insufficient. Decision to proceed to emergency coronary artery bypass grafting, intra aortic balloon pump (IABP) inserted prior to transfer)

22:05 Arrival in cardiac theatres

Systemically anticoagulated and expedited onto cardiopulmonary bypass. Ostial marginal branch and LAD grafted successfully. Weaned from bypass with intra-aortic balloon pump, dopamine and noradrenaline.

IABP removed on day 1 and extubated at 21:00. Vasoactive support weaned off on day 2. Discharged to the ward on day 4 and home on day 12 post natal.

Cardiac MRI at 6 weeks showed a severely dilated and moderately impaired left ventricle (LV), non viable LAD territory and regional wall motion abnormalities.

Discussion

Most cases of P-SCAD occur within the first month post partum but can present from the 5[th] week post conception to several months post-partum[2,3]. Defined as epicardial coronary artery dissection not associated with trauma, atherosclerosis or iatrogenic injury[2].

Occurs as a result of coronary artery obstruction by intramural haematoma +/- intimal rupture[3]. Aetiology proposed as hormonally mediated structural changes within the vascular system alongside the cardiovascular stress associated with pregnancy and labour[3].

Compared with non pregnancy related cases, P-SCAD is more likely to present with ST segment elevation myocardial infarction, have LMS or multi vessel involvement, impaired LV systolic function, congestive cardiac failure and cardiogenic shock[1,3].

Management options include medical therapy, percutaneous coronary intervention or CABG[3].

References

1.Tweet MS, Hayes SN, Codsi E et al. Spontaneous Coronary Artery Dissection Associated With Pregnancy. J Am Coll Cardiol. 2017;70(4)

2.Haynes SN, Kim ESH, Saw J et al. Spontaneous Coronary Artery Dissection: Current State of the Science: A Scientific Statement From the American Heart Association. Circulation. 2018;137:e523-e557

3.Vijayaraghavan, Verma S, Gupta N et al. Pregnancy-Related Spontaneous Coronary Artery Dissection. Circulation. 2014;130:1915-1920