

Spontaneous coronary artery dissection seen in the postpartum period

產後期間冠狀動脈內壁自發分離

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Spontaneous coronary artery dissection is a rare cause of acute coronary syndrome. It is usually seen during pregnancy and the postpartum period of middle-aged women. Coronary angiography is important in diagnosis and treatment planning. Treatment modalities are mainly medical therapy, coronary artery bypass surgery, percutaneous transluminal coronary angioplasty and/or stenting. Thrombolytics appear to be relatively contraindicated. This case report deals with the diagnosis, treatment and clinical presentation of a 37-year-old woman who had spontaneous coronary artery dissection emerging on the fourth day postpartum. (*Hong Kong j.emerg.med.* 2010;17:269-271)

冠狀動脈內壁自發分離是急性冠狀動脈綜合徵的一個罕見原因，通常見於中年女子懷孕期間及產後。冠狀動脈血管造影在診斷及治療計劃方面是重要的。治療方式主要為內科治理、冠狀動脈分流手術、穿皮經管腔冠狀動脈血管成形術及／或支架術。血栓溶解劑相對上顯得是禁忌。這個案報告一名37歲女子在產後第4天出現冠狀動脈內壁自發分離，並處理其診斷、治療及臨床徵象。

Keywords: Cardiovascular pregnancy complications, coronary disease, dissecting aneurysm, myocardial infarction, pregnancy

關鍵詞：妊娠心血管併發症、冠狀動脈疾病、壁間動脈瘤、心肌梗塞、懷孕

Introduction

Spontaneous coronary artery dissection (SCAD) is a rare disease and it is seen in the last three months of pregnancy and the postpartum period.^{1,2} Its frequency is one out of 20,000-30,000.^{2,3} Aetiological factors

include inflammation, haemodynamic changes, and pre-existing intimal lesions.⁴ In these patients, risk factors for coronary artery disease such as hypertension, family history of coronary artery disease, smoking and hypercholesterolaemia are present in 30% of cases.⁵ We present a patient with SCAD who had chest pain complaint on the fourth day postpartum.

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Case report

A 37-year-old Turkish woman was admitted in April 2009 with chest and back pain on post-partum day 4 of her normal spontaneous vaginal delivery of a baby. She had been seen in a medical centre. The diagnosis was acute myocardial infarction. She was given aspirin 300 mg and heparin 5000 units. She was immediately transferred to our hospital for further management. On arrival at our hospital, she still had chest and back

pain. She had neither risk factor for coronary artery disease nor for connective tissue disease. On physical examination, she was conscious. Her vital signs were unstable and the blood pressure was 60/40 mmHg. The electrocardiogram done in the first hospital revealed Lead I, aVL, V1-4 ST elevation (Figure 1). Haematology findings in our hospital were: white cell count 12,400/mL (normal 4,300-10,300/mL), haemoglobin 11.3 g/dL (normal 13.6-17.2 g/dL), platelet count 322,000/mL (normal 156,000-373,000/mL). Biochemical tests were high: alkaline phosphatase 168 U/L (normal 40-150 U/L), aspartate aminotransferase 152 U/L (normal 5-34 U/L), lactate dehydrogenase 538 U/L (normal 125-243 U/L), creatine kinase 1925 U/L (normal 29-168 U/L), and creatine kinase-MB 183 U/L (normal 0-24 U/L) but others were within normal limits. Troponin I level was raised at 21 ng/mL (normal 0.00-0.40 ng/mL). The cardiologist was consulted. The patient was taken to the coronary angiography suite. Angiography revealed circular dissection from the left main coronary artery (LMCA) to the proximal part of the circumflex coronary artery (Cx) (Figure 2). Surgical treatment was believed to be appropriate for her. She was taken to the operating room on the same day. In the

preoperative evaluation, it was observed that dissection started from the LMCA to the Cx and left anterior descending artery (LAD) middle segment. She was treated with coronary artery bypass surgery with left internal mammary artery (LIMA)-LAD, aorta-obtuse marginal and aorta-diagonal anastomosis. She recovered gradually and was discharged from our hospital well after eight days.

Discussion

SCAD is seen rarely but has a high mortality rate (38%).⁵ It is a rare cause of acute myocardial infarction. Thirty percent of these patients had the usual risk factors for coronary artery disease such as hypertension, family history of coronary artery disease, smoking and hypercholesterolaemia.⁵ Our patient did not have any coronary artery disease risk factors. SCAD is the result of an intramural haematoma in the media layer of the arterial wall that creates a false lumen and expansion of this lumen through blood or clot accumulation leads to compression of the real lumen and to myocardial ischaemia.⁶ The mortality rate is over 70% in patients presenting with acute myocardial infarction.³

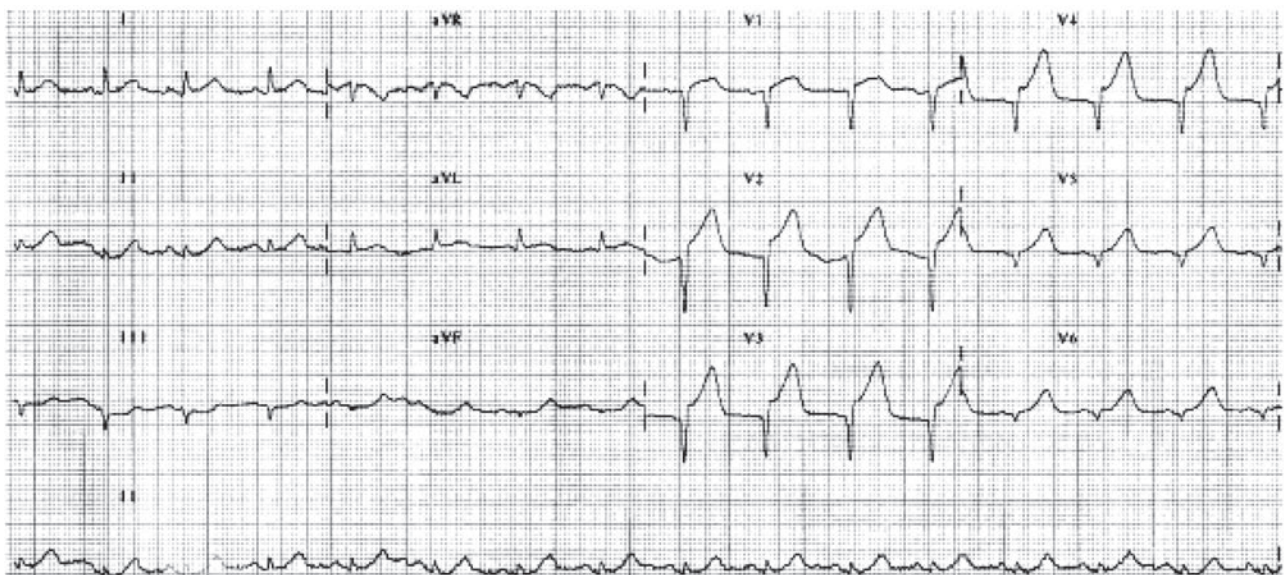


Figure 1. Lead I, aVL, V1-4 ST elevation.

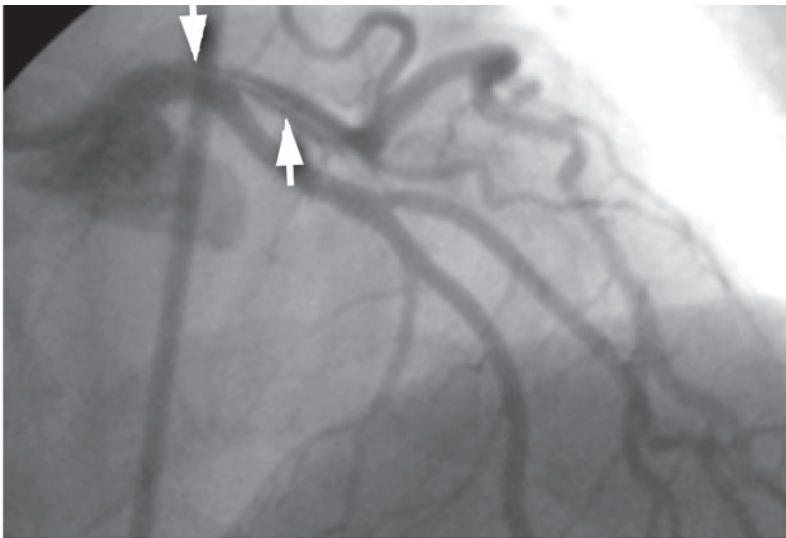


Figure 2. Circular dissection extending from left main coronary artery to proximal circumflex coronary artery.

Treatment modalities for SCAD are mainly medical therapy, coronary artery bypass surgery, percutaneous transluminal coronary angioplasty and/or stenting. Treatment decision depends on the general condition on presentation, site and extent of dissection and number of vessels involved. Thrombolytics appear to be relatively contraindicated.^{7,8} As our patient had hypotension on presentation, persisting chest pain despite medical therapy, multi-vessels involvement, coronary artery bypass surgery was regarded as appropriate for her.

Conclusion

SCAD is a rare cause of acute myocardial infarction in the peripartum and postpartum periods. Early diagnosis and treatment are important in decreasing mortality.

Appendix

This case report was presented as a poster presentation at the 5th Congress of Turkish Emergency Medicine between 29th October and 1st November 2009 in Antalya, Turkey. It was awarded the first prize in the category of poster presentation.

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