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Study of one patient with acute coronary syndrome without obstructive coronary disease

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Topic(s):
Acute Coronary Syndromes: Myocardial Infarction with Non-obstructive Coronary Arteries

Citation:

Background:
Among patients admitted at catheterization laboratory with acute coronary syndrome (ACS) a minority have non-obstructive epicardial coronary disease. A systematic diagnostic work-up for further implementation of the most appropriate treatment should be crucial for getting better outcomes with this group of patients.

Clinical case description:
A 42-year-old woman, with known history of hypertension and dyslipidaemia woke up at the middle of the night with a retrosternal pain radiating to the left arm and feeling nausea. The pain lasted thirty minutes, and when she arrived at the hospital 45 minutes later there were no changes on physical examination, her blood pressure was 138/82mmHg and the heart rate was 83bpm. Electrocardiogram revealed sinus rhythm with a depression of the ST segment with 1mm in DIII and aVF and T-wave inversion from V3 to V5. Transthoracic echocardiogram showed normal biventricular function, with no segmental motion abnormalities. Blood sample analysis revealed a Troponin I of 1.52ng/ml (cutoff 0.06ng/ml).

The patient was kept under observation with the diagnosis of acute myocardial infarction without ST segment elevation with no criteria for emergent transportation for a percutaneous coronary intervention (PCI) capable center and a coronary angiography was proposed for the following day. However, 12-hours later, a new episode of chest pain started. Electrocardiogram revealed a ST-segment elevation in DII, DIII and aVF and an episode of self-limited ventricular tachycardia with a duration of 45 seconds happened. During this episode of pain her blood pressure raised to 197/87mmHg. Emergent transport to a PCI-center was performed, but coronary angiography showed no significant coronary lesions and the pain was self-limited in time again.

After the coronary angiography, the medical history was reviewed and previous 2-months of self-limited chest pain episodes associated with hypertension and flushing were referred. With the suspicion of pheochromocytoma, an abdominal CT was performed that revealed a nodular lesion (64x63x75mm, figure 1) with heterogeneous uptake in the right adrenal gland topography with relative and absolute wash-out values of 17% and 44% respectively, associated with elevation of urine 24-hours metanephrines (Normetanephrine – 11204ug; metanephrine – 3704ug) and elevation of catecholamines in plasma (noradrenaline – 7298 pg/ml; adrenalin 804pg/ml; Dopamine 227pg/ml).

The acute episodes were initially controlled with an alpha-blocker (phenoxybenzamine) followed by the association with a beta-blocker (Bisoprolol). After the patient was stable, a right adrenalectomy was performed with success, with histological diagnosis of pheochromocytoma with cytological criteria of malignancy.

Conclusion: Clinical suspicion should guide the use of additional diagnostic tests to determine the cause of an ACS with non-obstructive epicardial coronary disease, turning every case in a different clinical challenge.
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