Acute Right Ventricular Myocardial Infarction Following Percutaneous Coronary Artery Intervention

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SIDE-BRANCH OCCLUSION DURING PERCUTANEOUS CORONARY INTERVENTION (PCI) IS A WELL KNOWN COMPLICATION OF RIGHT VENTRICULAR MYOCARDIAL INFARCTION (RVMI) [1]. IATROGENIC ACUTE RVMI FOLLOWING PCI OF THE RIGHT CORONARY ARTERY (RCA) IS RARE. VAN DER BOLT ET AL. [2] REPORTED NINE CASES OF ACUTE RVMI FOLLOWING 2300 CASES OF PCI OF RCA (0.4%).

The electrocardiographic pattern of RVMI may be misinterpreted and unrecognized if not suspected.

We report a case of RVMI following PCI at our medical center.
II–III–AVF, and 50% decreases in ST segment depression in leads I–aVL. No development of anterior Q waves were seen. The next day, coronary angiography (CK–MB) raised to 1363 IU/L and troponin T to 1835 μg/L. The patient remained asymptomatic and hemodynamically stable during in-hospital follow-up.

COMMENT

The right ventricle had blood flow supplied mainly by the RCA. The conal branch irrigates the outflow tract and the right ventricle branches. ST segment elevation in precordial leads is seen during anterior left ventricular myocardial infarction (MI) due to the occlusion of LAD as well as during isolated RVMI following occlusion of the right ventricle branch or non-dominant RCA.

Isolated RVMI is characterized by ST segment elevation in V1–V4 with V2 > V3–V4, and leads during PCI of RCA raises the suspicion of right ventricle MI due to right ventricle branch occlusion and avoids the wrong diagnosis of LAD occlusion.

CONCLUSIONS

ST segment elevation in leads V1–V4 with V2 > V3–V4, and leads during PCI of RCA has been observed in 10% to 50% of patients experiencing acute diaphragmatic MI [4] and it is due to the occlusion of RCA proximal to the conal and right ventricle branches.

Diaphragmatic MI with right ventricle involvement is characterized by ST segment elevation in leads II–III–AVF–V4R and ST depression in leads I–aVL. When RVMI is associated with left ventricle (LV) diaphragmatic MI, the injury electric current of the LV dominates that of the RV and suppresses the ST segment elevation in V1–V4 [5]. In our patient, ST segment elevation in leads V1–V4 was not suppressed during the diaphragmatic myocardial reinfarction, probably because the injury of the LV inferior wall was minimal.

References


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Capsule
From childhood to adulthood: disease activity trajectories in childhood-onset systemic lupus erythematosus

No previous research has studied the longitudinal disease course of childhood-onset systemic lupus erythematosus (cSLE). Lim et al. assessed distinguishable differences in disease activity trajectories in cSLE patients to determine baseline factors predictive of disease trajectory membership and whether the different disease activity trajectories are associated with different damage trajectories. In this retrospective, longitudinal inception cohort of cSLE patients, patients were followed from diagnosis as children until adulthood. SLE disease activity was modeled as a latent characteristic, jointly using the Systemic Lupus Erythematosus Disease Activity Index 2000 and prednisone in a Bayesian growth mixture model. Baseline factors were tested for membership predictions of the latent classes of disease trajectories. Differences in damage trajectories by disease activity classes were tested using a mixed model. A total of 473 patients (82% females), median age at diagnosis of 14.1 years, were studied. The authors studied 11,992 visits (2666 patient-years) and identified five classes of disease activity trajectories. Baseline major organ involvement, number of American College of Rheumatology criteria, and age at diagnosis predicted classification. A higher proportion of Asians were in class 2 compared to class 5. Class 1 was associated with the most accrual of damage, while class 5 was associated with no significant damage accrual, even after 10 years. The authors concluded that there are five distinct latent classes of disease trajectory in patients with cSLE. Classification within disease trajectories is predicted by baseline clinical and demographic factors. Classification in different disease activity trajectory classes is associated with different damage trajectories.

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“The main difference between a cat and a lie is that a cat only has nine lives”
Mark Twain, (1835–1910), American humorist, writer