IHJ Cardiovascular Case Reports (CVCR) 2 (2018) 20–23

Contents lists available at ScienceDirect

IHJ Cardiovascular Case Reports (CVCR)

journal homepage: www.elsevier.com/locate/ihjccr

Role of Tc-99m sestamibi SPECT/CT myocardial perfusion imaging in management of spontaneous coronary artery dissection: A case report

Shelvin Kumar Vadi[a], Deepa Singh[a], Ashwani Sood[a,*], Ajay Bahl[b], Madan Parmar[a], Bhagwant Rai Mittal[a]

[a] Department of Nuclear Medicine, PGIMER, Chandigarh, 160012, India
[b] Department of Cardiology, PGIMER, Chandigarh, 160012, India

ARTICLE INFO

Article history:
Received 23 December 2016
Received in revised form 11 August 2017
Accepted 8 January 2018

Keywords:
Myocardial perfusion imaging
Single Photon Emission Computed Tomography
Tc-99m sestamibi
Spontaneous coronary artery dissection

ABSTRACT

Spontaneous coronary artery dissection (SCAD) is a rare sporadic disorder of abrupt dissection in the coronary arteries resulting in impaired perfusion to the myocardium. The authors present two cases of SCAD where myocardial perfusion imaging (MPI) done for assessment of myocardial viability helped in deciding the definitive management.

Introduction

Spontaneous coronary artery dissection (SCAD) is a rare sporadic disorder of abrupt dissection in the coronary arteries resulting in impaired perfusion of the myocardium. It is most commonly seen in the pregnant women or in their post-partum period. Small series and number of case reports had been published since its first description in autopsy of 42-year-old woman in year 1931[1] followed by first angiographic evidence in 55-year-old man with acute myocardial infarction almost 50 years later.[2] The prevalence of SCAD is in the order of 0.2–1.1% of coronary angiographies performed.[3] The management of patients with SCAD is still a challenge because of rarity of disease and its diverse clinical presentation.

Here we report the role of Tc-99m sestamibi single photon emission computed tomography/computed tomography (SPECT/CT) myocardial perfusion imaging (MPI) in two cases of SCAD which helped in guiding the further management.

Case report

Case 1: Twenty-five year-old female developed chest pain during the 10th postpartum day of her second full-term normal delivery. She didn't have personal/family history of any previous cardiovascular event, no known atherosclerotic risk factors or connective tissue/immunological disorders and no history of oral contraceptive pills intake. Echocardiography (ECHO) done outside was suggestive of rheumatic heart disease (RHD) in form of severe mitral stenosis, moderate mitral regurgitation, moderate tricuspid regurgitation and moderate pulmonary artery hypertension with normal left ventricular ejection fraction (LVEF). Coronary angiography (CAG) was not performed at that time. The patient responded well with conservative management for RHD. However the patient presented with acute chest pain of 10 days duration after 1.5 years of first episode of chest pain. The cardiac biomarkers were not evaluated. Her electrocardiogram (ECG) showed ST-segment elevation in V2–V5 and regional wall motion abnormality (RWMA) in left anterior descending (LAD) territory with low LVEF (~35–40%) on ECHO. CAG showed type III LAD with distal SCAD (Fig. 1a&b).Tc-99m sestamibi SPECT/CT study was done with dual head gamma camera (Brightview XCT with Astonish software, Philips) without sublingual nitrate augmentation (due to low blood pressure) for myocardial viability assessment for further treatment planning. The images revealed non-viable apex, distal anterior and septal regions involving ~34–36% of LV myocardium (Fig. 1c). Gated

* Corresponding author.
E-mail address: sood.ashwani@pgimer.edu.in (A. Sood).

https://doi.org/10.1016/j.ihjccr.2018.01.001

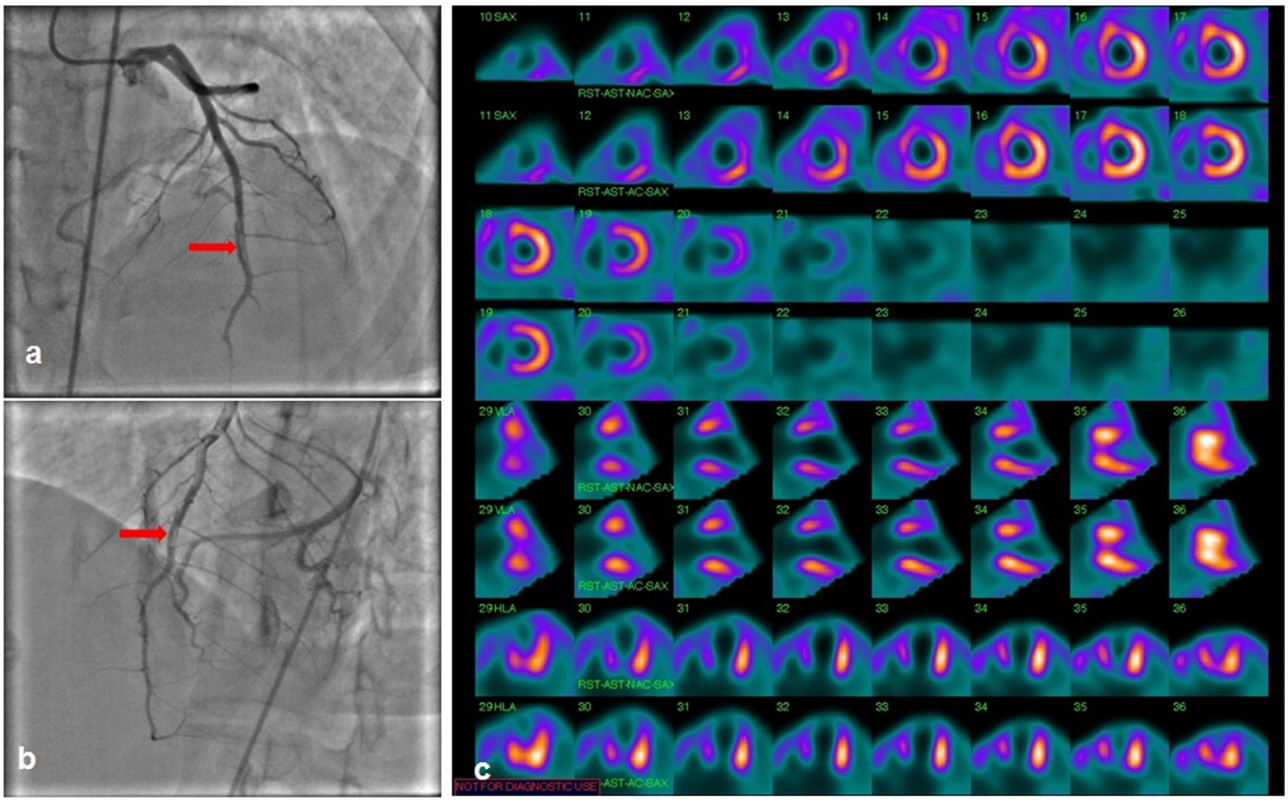

Fig. 1. Coronary angiography in 25-year old female showed spontaneous coronary artery dissection in the distal left anterior descending artery (a, b). Tc-99m sestamibi SPECT/CT MPI revealed predominantly non-viable myocardium involving apex, parts of apical segments, mid anterior segment and part of mid septum involving ~34–36% of LV myocardium (c).

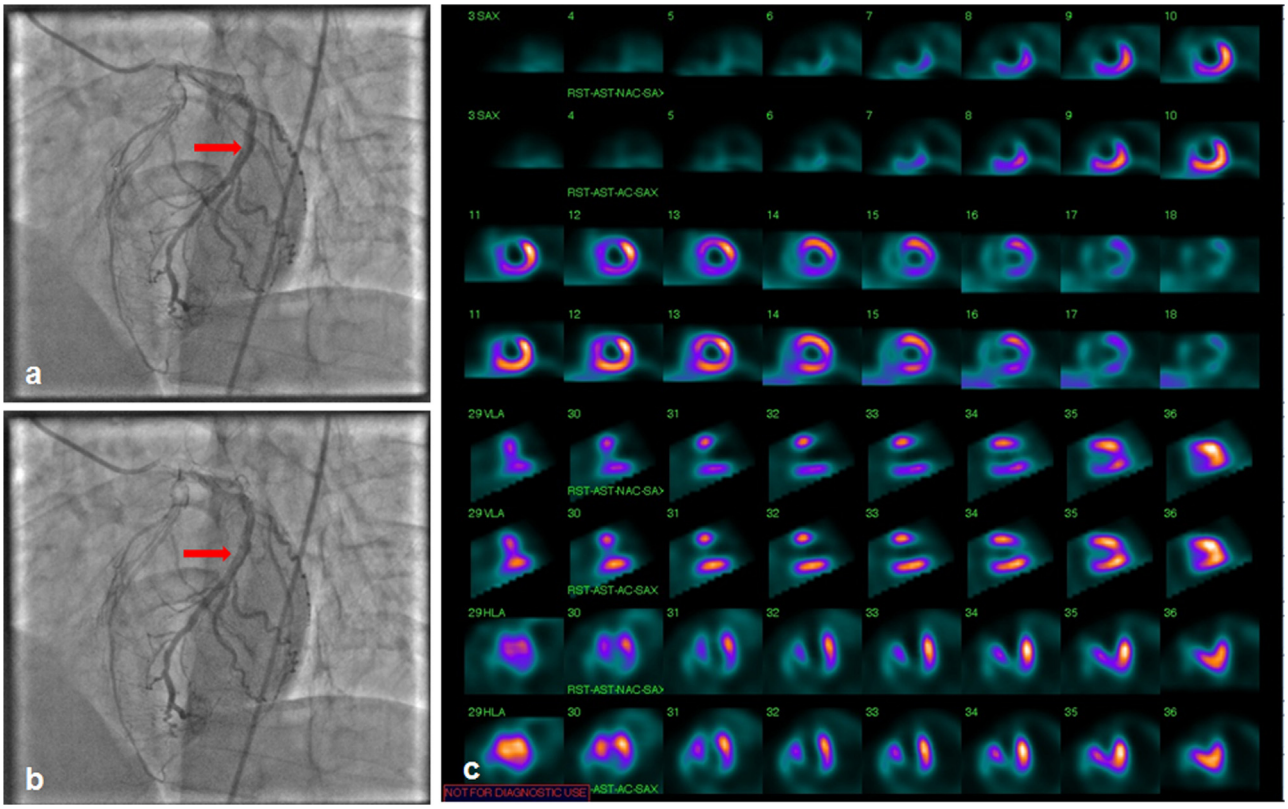

Fig. 2. Coronary angiography in 52-years male showed radiolucency along the wall of the mid LAD suggestive of coronary artery dissection (a,b). Tc-99m sestamibi SPECT/CT MPI revealed non-viable apex, apical and adjacent mid anterior, parts of rest of the apical segments involving ~22–24% of the LV myocardium and predominantly viable mid & basal antero-septum and adjacent part of infero-septum involving ~14–16% of the LV myocardium (c).