

## Correlation of myocardial viability in nuclear perfusion scan and patency of infarct related artery in patients of ST elevation myocardial infarction with late presentation



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**Background:** The initial 12 h after acute myocardial infarction is the critical time to salvage myocardium and so, revascularization thereafter may not have any prognostic benefit particularly in absence of chest pain. The presence, extent of viability, and a critical threshold mass of viable myocardium by nuclear perfusion scan help to determine in which patient there will be functional recovery, so benefit of revascularization. The purpose of this study is to establish co-relation of myocardial viability in nuclear perfusion scan and patency of infarct related artery in patients of ST elevation myocardial infarction with late presentation.

**Method:** This is single center observational study. The confirmed cases of myocardial infarction with late presentation on the basis of case histories, clinical manifestations, electrocardiogram, cardiac markers. and echocardiography underwent myocardial perfusion scan with 99mTc-sestamibi and coronary angiogram. The findings of myocardial viability were compared with coronary angiogram.

**Results:** The reports of twenty patients were analyzed. The time of presentation after onset of symptoms varies from 15 to 48 h with average of 22.5 h. 80% ( $n = 16$  patients) had nonviable myocardium with TIMI 0 and 1 flow, high thrombus burden, and absence of collaterals ( $p > 0.001$ ). The 15% ( $n = 3$  patients) had partially viable myocardium despite of delayed presentation ( $p < 0.001$ ). These three patients had high thrombus burden, TIMI 0-1 flow but good retrograde collaterals. One patient (5%) had nonviable myocardium with TIMI 2 flow, TIMI TG 1 thrombus in infarct related artery and without collaterals. There was a strong positive correlation between myocardial viability and angiographic findings with correlation co-efficient +0.954 ( $p < 0.001$ ).

**Conclusion:** Timely restoration of blood flow in infarct related artery is most important parameter for myocardial viability. However presence of good collateral minimizes or delays the cell death. Presence of thrombus burden is another important factor which determines the extent of viability.

after 3 days. He also developed gradually increasing pedal edema and abdominal distention. Echocardiography revealed thickened pericardium with mild pericardial effusion all around with a  $6.0 \text{ cm} \times 3.8 \text{ cm} \times 6.5 \text{ cm}$  hyperechoic mass abutting the infero-posterior surface of the heart and compressing the right ventricle. There was no color flow within the mass. In view of recent history of pericardiocentesis, a possibility of traumatic pseudoaneurysm of right coronary artery was suspected. CT angiography showed a large pseudoaneurysm of PDA branch of RCA with organized thrombus. He was operated for pericardiectomy along with resection of the pseudoaneurysm with proximal ligation of the source branch of the PDA branch.

**Conclusion:** One should be aware of potential coronary artery injury during pericardiocentesis, though this complication is extremely rare. Poor technique with too deep a needle passage, especially misdirected posteriorly, would have been the reason in this case. This also has practical implications in the post-CABG pericardial effusions as the chance of graft injury is even more higher.

## Imaging in endomyocardial fibrosis



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A 49-year-old male from Assam was referred for cardiac evaluation for atypical chest pain. Clinical examination, X-ray chest and ECG were within normal limits. Echodoppler studies revealed apical obliteration of the right ventricle, mild tricuspid regurgitation, mild dilatation of the right ventricle and right atrium, normal left ventricular morphology and function, no regional wall motion abnormality, mass, calcification, pulmonary hypertension besides normal valves, septae and pericardium. Contrast enhanced cardiac computed tomographic angiography (CECTA) and cardiac magnetic resonance imaging (C MRI) revealed altered signal intensity in the right ventricular apex extending into the right ventricular outflow tract. Coronary and left ventricular angiography was normal while right ventricular angiogram revealed apical obliteration of the apex suggesting a diagnosis of right ventricular endomyocardial fibrosis. CECTA and C MRI are useful non-invasive imaging modalities in diagnosing endomyocardial fibrosis.

## Coronary artery injury during pericardiocentesis – An extremely rare complication



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**Introduction:** Pericardiocentesis, being a “blind” procedure, can rarely result in coronary arterial injury with catastrophic consequences. We report a very rare case of Posterior descending artery (PDA) trauma caused by pericardiocentesis, resulting in a large pseudoaneurysm.

**Case report:** A 19 year male with a large pericardial effusion underwent pericardiocentesis elsewhere. His symptoms reappeared



