

Discussion

Fascicular VT is a specific form of idiopathic VT that originates in or near the fascicles of left bundle branch. It is characterized by wide QRS complex (right bundle branch block pattern) and left-axis deviation. It is also known as verapamil-sensitive VT. Fascicular VT can be classified into three subgroups according to its site of origin as left posterior, left anterior and upper septal fascicle. Fascicular VT is a disease of young age. We found only a few reported patients over the ages of 50 years (3, 5, 6). The oldest patient we could find in the literature is 69 years old (3). Our patient is noteworthy because of the diagnosis of fascicular VT in a patient with advanced age. Furthermore, our case is interesting because a history of VDD pacemaker implantation due to complete AV block.

Because of preexisting complete AV block in our patient, a wide QRS tachycardia could only be a VT. Due to RBBB pattern, we have accepted that the tachycardia was originating from the left ventricle. In clinic practice; VT, antidromic atrioventricular tachycardia and supra-ventricular tachycardia with aberrancy should be considered for differential diagnosis of wide QRS complex tachycardia (7). In some patients with normal AV nodal conduction and dual chamber pacemaker, a pacemaker-mediated tachycardia should also be considered. Single chamber VDD pacemaker had been implanted due to complete AV block in our patient. For this reason, wide a QRS complex tachycardia with right bundle block morphology is diagnostic for VT of left ventricular origin. Our patient did not have a structural heart disease and ECG findings (RBBB, superior axis) were compatible with idiopathic VT. Additionally, the earliest ventricular activity was recorded in the posterior of interventricular septum during electrophysiological study.

Conclusion

As a result, idiopathic VT was diagnosed and successfully terminated with RF ablation.

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Myocardial 99m-Tc tetrofosmin reverse redistribution as a possible marker of tissue at risk

Risk altındaki dokunun olası belirteci; miyokardiyal 99m-Tc Tetrofosmin revers redistribüsyon

Introduction

The "reverse redistribution" phenomenon (RR) refers to a myocardial perfusion defect that develops on rest imaging, whereas scans acquired after stress show an apparently uniform distribution. This finding has been observed with thallium-201 (Tl-201) in a variety of cardiac conditions (1-5).

Tc-99m-labeled radio-pharmaceuticals may also yield a "reverse perfusion" pattern. As for thallium, some authors consider reverse perfusion of Tc-99m-labelled tracers a mere artifact, without clinical significance (6). Conversely, this phenomenon has been associated to coronary artery disease (7) and myocardial infarction (8). We had also described that the reverse perfusion pattern with Tc-99m tetrofosmin could be often observed in patients with previous myocardial infarction and normal coronary arteries (9).

We describe a sixty-year old patient with effort chest pain and reverse perfusion pattern at tetrofosmin Tc-99m SPECT who evidenced a significant stenosis on the proximal portion of the left anterior descending coronary artery.

Case Report

A sixty year-old man was seen in April 2009 for the evaluation of typical effort chest pain of recent onset (2 months). He was an ex-smoker with mild hypercholesterolemia and no other cardiovascular risk factors. He had not reported previous cardiovascular events. He had been treated with several cycles of chlorambucil, endoxane and melphalan for chronic lymphatic leukaemia and, in 1997, autologous bone marrow transplantation. Since then, he had been doing well and without disease relapse. Follow-up echocardiography was normal. Resting electrocardiogram (ECG) showed diffuse repolarization abnormalities, while 2D echocardiography evidenced mild hypokinesis of the inferior apex. Treadmill exercise testing evidenced worsening of the pre-existent ECG alterations and was judged as not unequivocal. Tc-99m tetrofosmin SPECT imaging showed normal perfusion after stress test and apical hypo-perfusion at rest (Fig. 1). However, based on our previous experience and because of continuing symptoms, the patient underwent coronary angiography, that evidenced a 75% focal

stenosis of the proximal portion of the left anterior descending coronary artery (Fig. 2); the remaining branches of the coronary tree were normal. The lesion was successfully treated with bare metal stent implantation, completed by plain balloon angioplasty on the first diagonal branch (Fig. 3). A bare metal stent was preferred because of the previous diagnosis of chronic lymphatic leukaemia. At 3 months follow-up, the

patient was well and asymptomatic, despite exercise testing was again judged as not unequivocal. Analogously to before PTCA, a mild degree of reverse perfusion pattern in the apex in the perfusion scintigraphy (Fig. 4) and mild hypokinesia at echocardiography were still evident. However, at this time control coronary angiography evidenced patent coronary arteries and the patient was discharged on medical therapy.

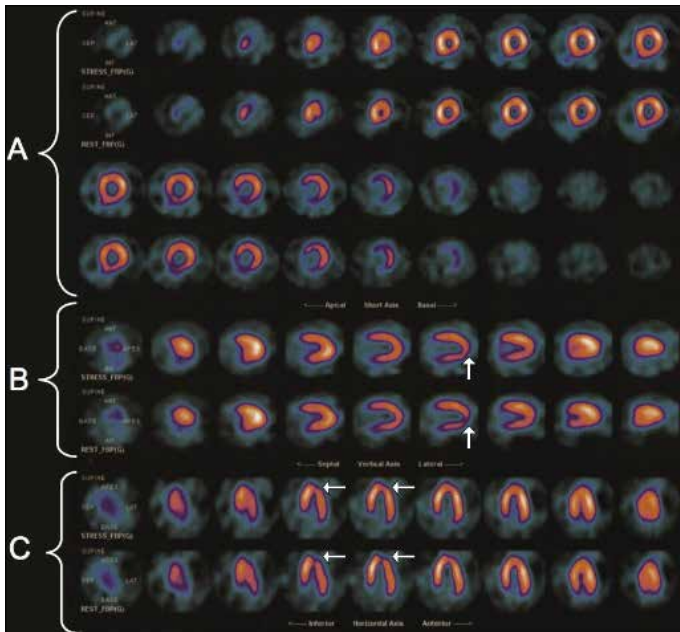


Figure 1. Stress/Rest Tc-99m tetrofosmin imaging. (A) short axis, first and third series refer to stress images, second and fourth series to rest images. (B) vertical axis, first series refer to stress images, while second series to rest images. (C) horizontal axis, first series refer to stress images, while second series to rest images. In B and C apical perfusion appears improved after stress, upper tomograms, compared to rest images, lower tomograms (see arrows)

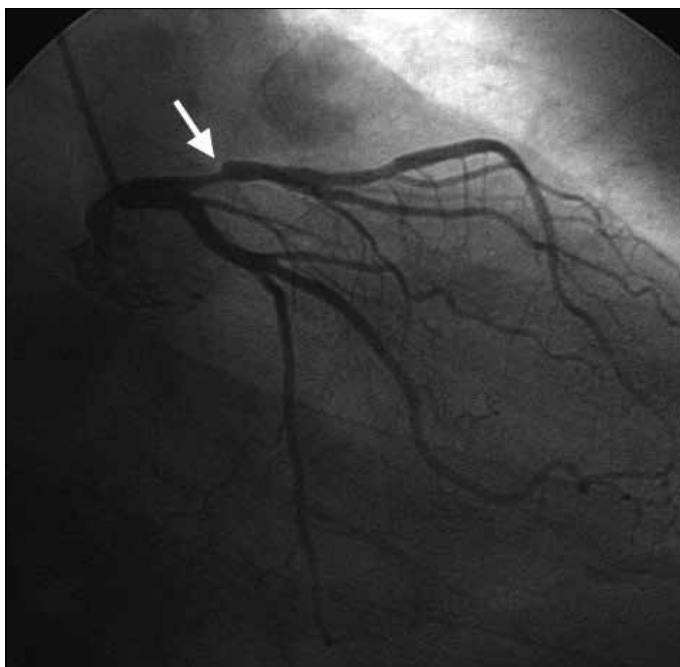


Figure 2. Coronary angiography showing 75% stenosis in the proximal portion of the left anterior descending coronary artery (see arrow)

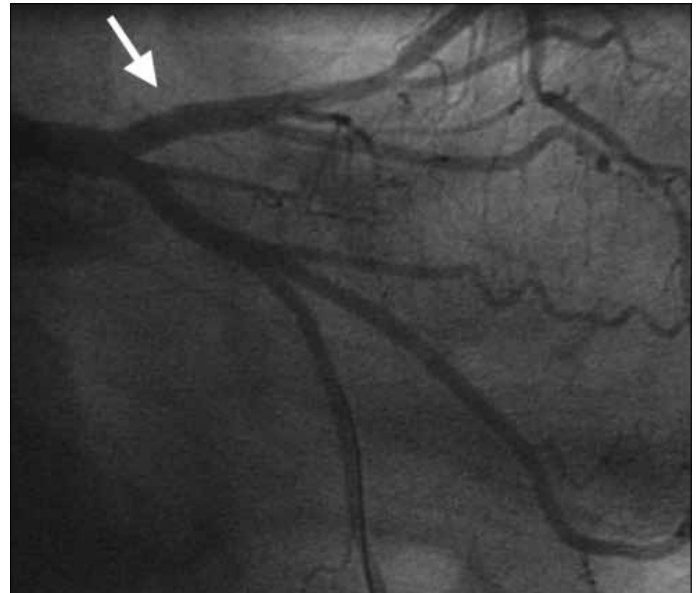


Figure 3. Coronary angiography after angioplasty and implantation of a bare metal stent in the proximal portion of the left anterior descending coronary artery (see arrow)

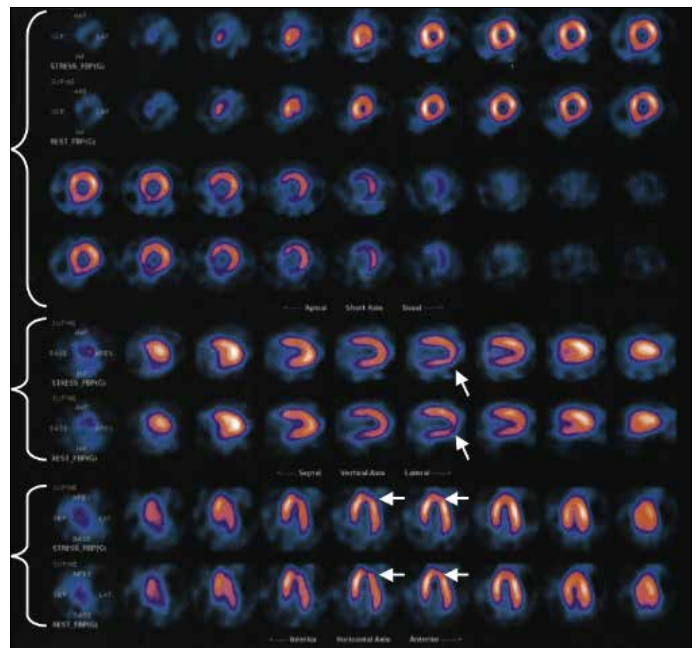


Figure 4. Stress/Rest Tc-99m tetrofosmin imaging. (A) short axis, first and third series refer to stress images, second and fourth series to rest images. (B) vertical axis, first series refer to stress images, while second series to rest images. (C) horizontal axis, first series refer to stress images, while second series to rest images. Similarly to pre PTCA tomograms, in B and C apical perfusion appears improved after stress, upper tomograms, compared to rest images, lower tomograms (see arrows)

Discussion

In the present report, the reverse redistribution of Tc-99m tetrofosmin was likely indicative of a previous subendocardial lesion in a myocardial region distal to a significant coronary stenosis. In fact, this peculiar scintigraphic pattern was still present after three months, despite resolution of symptoms and patency of the stented coronary artery.

A likely interpretation of this peculiar scintigraphic pattern is that myocardial hyperemia induced by exercise might mask reduced perfusion of areas of patchy, subendocardial necrosis (2, 4, 7-10). Therefore, it is conceivable that these defects originate from areas in which normal myocardium is interspersed with scar tissue. The hyperemic response induced by exercise within normal myocardium surrounding these areas could mask their underperfusion, which becomes evident at rest. As a matter of fact, our patient showed a reverse perfusion pattern in the left ventricular apex and a stenosis of the left anterior descending coronary. Our hypothesis is that, in our patient, the observed scintigraphic pattern could be related to the presence of patchy, non-transmural necrosis. Alternatively, the flow-limiting stenosis of the left anterior descending coronary artery could induce stunning of distal myocardium and subsequent reverse perfusion pattern. In fact, a combination of these two mechanisms is likely to be at work, since a milder degree of reverse perfusion and mild hypokinesia at echocardiography were still evident at 3 months, despite patency of the stented vessel.

Conclusion

We suggest that when observed in patients with chest pain, a Tc-99m tetrofosmin reverse perfusion pattern should be regarded as a possible marker of tissue at risk in the context of an infarcted subendocardial area. Therefore, in these patients the need for coronary angiography should be carefully considered.

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