

Pacemaker-induced massive tricuspid regurgitation

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Case report: Female patient was admitted to the Cardiology Department with the symptoms of inappetence, dyspnea, and acute heart failure. She was 83-year-old woman who had single chamber right ventricular pacemaker (PM) implanted in 2006 because of a complete AV block, and reimplanted again in 2014. She had a long history of hypertension, atrial fibrillation, and was diagnosed with pulmonary embolism in 2015. Upon admission she had a radiologically and clinically verified signs of heart failure. The ECG showed a permanent pacing. Echocardiogram verified preserved global and segmental left ventricular (LV) systolic function, with mild LV diastolic dysfunction. Systolic function of the right ventricle was normal, with dilatation of the right chambers of the heart. Tricuspid valvular ring was dilated, and there was a „loop“ of the pacemaker lead moving freely through the valve, with massive tricuspid regurgitation. Systolic pulmonary artery pressure was 45 mmHg. Patient was treated with diuretics and was soon clinically better. Because of her fragile health it was decided not to pursue cardiosurgical intervention, or to change the pacemaker lead.

Conclusion: A mild or moderate TR is a common echocardiographic finding in patients with PM and has been reported as high as 53%. Such a prevalence of mild or moderate TR is expected since the lead crosses the tricuspid valve and may slightly impair its closure. Severe lead induced tricuspid regurgitation (LITR) is very rare. Usually results from implantation damage to tricuspid valve (perforation or laceration of the tricuspid leaflets) or lead interference with the tricuspid valve leaflets. It can also be due to an abnormal activation of the right ventricle with a delayed activation of the apex and the papillary muscles. Fibrosis adhesions between lead and tricuspid valve have been described and may cause delayed severe TR. Diagnosis is based on symptoms, clinical examination, echocardiogram, cardiac CT, or MRI. Therapeutic approach can be conservative or surgical.¹⁻³

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LITERATURE

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