

Tricuspid Insufficiency (TR) Following Percutaneous CRM Lead Extraction: Risk Factors and Clinical Course

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Background:

CRM lead extraction carries a risk of serious side effects, including tricuspid regurgitation (TR), a topic seldom discussed in the literature.

Aims:

We sought to assess the incidence, risk factors and clinical outcome of TR following CRM lead extraction.

Methods:

The study is a retrospective study based on data collection from files of patients who underwent CRM extraction at the Sheba Medical Center between the years 2004-2011. Echocardiography results before and following the procedure were used to confirm TR development, which was defined as an echocardiographic increase of at least 1 stage in the TR. Various clinical and echocardiographic parameters including preexisting TR, ICD vs. PM leads and use of a laser sheath were analyzed as risk factors for new or worsened TR using Chi-Square analysis. Clinical and echocardiographic follow-up was conducted to assess the clinical significance of TR development.

Results:

152 patients underwent CRM extraction during 2004-2011; results from the extractions of 86 patients (196 electrodes) were analyzed. New or worsening TR was discovered in 15.1% of patients (n=13, "TR group"). Only young age at extraction was found as a risk factor for TR development (p=0.027). Average follow-up was 22.25±21.34 months (range 8-93); Patients in the TR group suffered a non-significant increase in right heart failure rates (p=0.183) and hospitalizations due to heart failure exacerbations (p=0.110). No patient required tricuspid valve surgery. 27 deaths occurred (31.3%) 15±17.74 months after the procedure (range 0.5-54), of those 3 in the TR group; TR development was not a significant risk factor for mortality.

Conclusions:

TR following CRM extraction is not uncommon, and is associated with young age at extraction. Although it does not severely affect prognosis, its long term effects remain to be studied.