

Dissociated electrical activities in the left atrial posterior wall seen in a patient with focal atrial tachycardia after heart transplantation

Shunsuke Kawai¹, Yasushi Mukai^{1*}, Akiko Chishaki², and Hiroyuki Tsutsui¹

¹Department of Cardiovascular Medicine, Kyushu University Graduate School of Medical Sciences, 3-1-1 Maidashi, Higashiku, Fukuoka 812-8582, Japan; and ²Department of Health Sciences, Kyushu University Hospital, Higashiku, Fukuoka 812-8582, Japan

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Case description

A 34-year-old man presented with drug refractory symptomatic atrial tachycardia (AT) a month after bicaval orthotopic heart transplantation

due to dilated cardiomyopathy. An electrophysiological study was performed after transplant rejection was ruled out. The activation map in the right atrium (RA) during the AT showed a centrifugal activation from the high atrial septum. Atrial tachycardia was terminated due to a

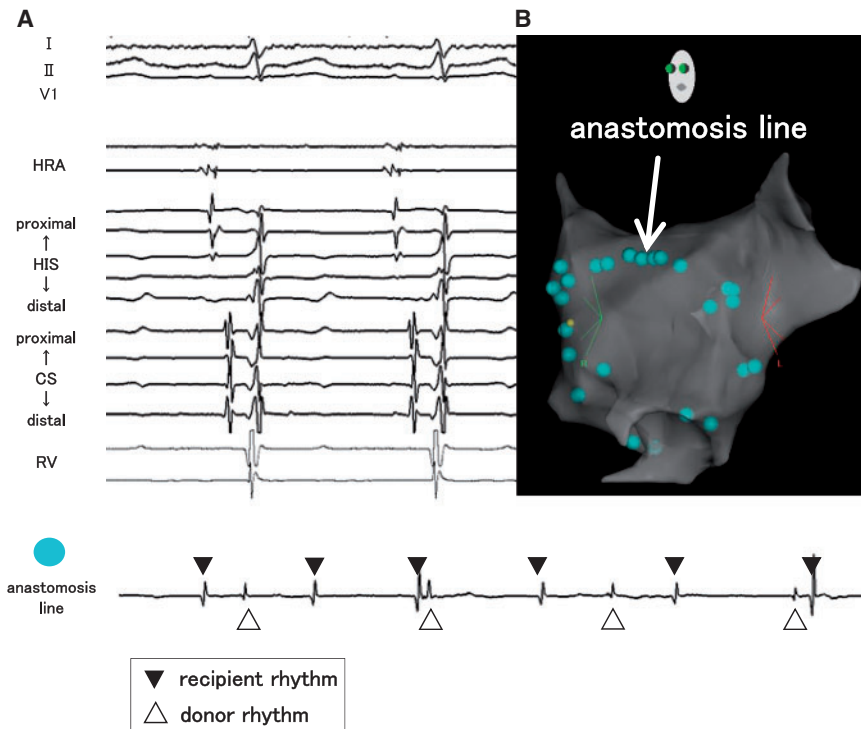


Figure 1 Electrophysiological identification of the anastomosis line. (A) Local electrograms on the anastomosis line during sinus rhythm. White arrowheads and black arrowheads indicate donor rhythm and recipient rhythm, respectively. (B) The line of light blue dots represents the anastomosis line. CS, coronary sinus; HRA, high right atrium; RV, right ventricle.

* Corresponding author. Tel: +8 192 642 5360, Fax: +8 192 642 5374, Email: y_mukai@junnai.org. This case report was reviewed by Philipp Sommer and Giulio Conte.

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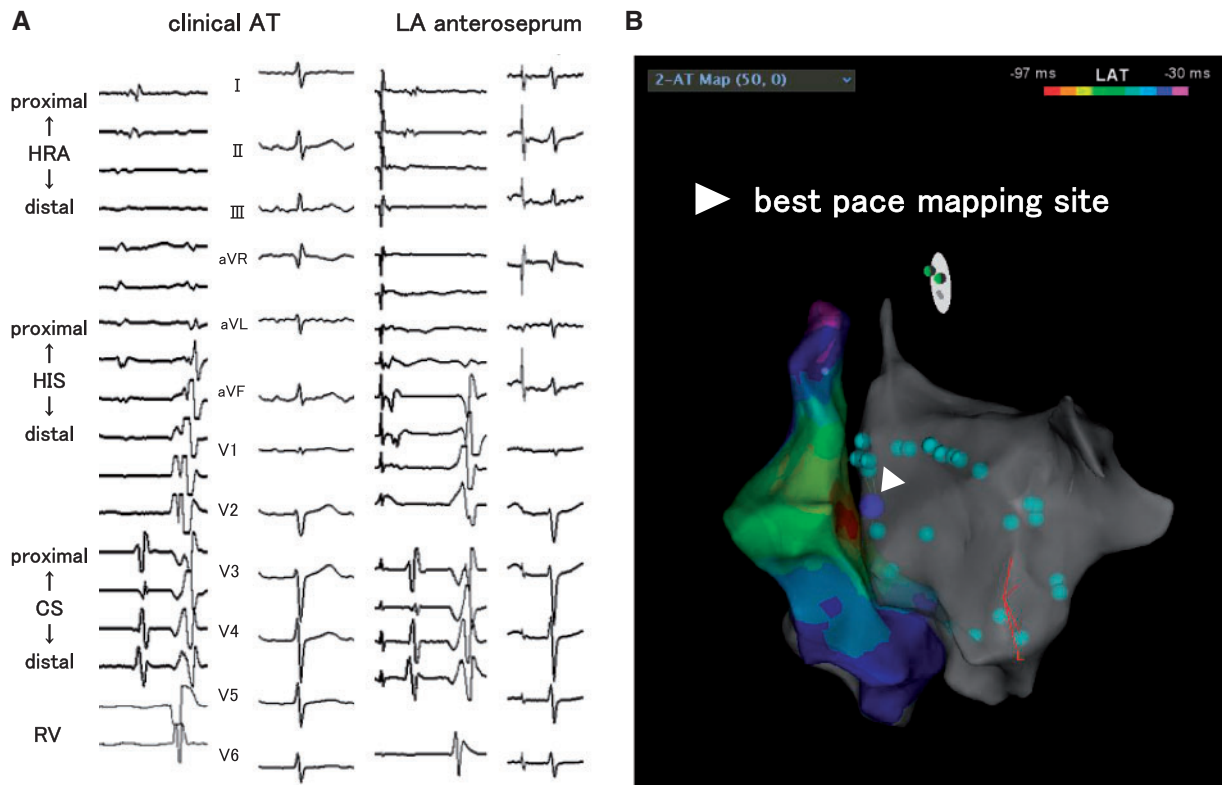


Figure 2 Origin of the focal atrial tachycardia in the left atrium. (A) Intracardiac electrograms and the configuration of P wave at the best pace mapping site (left atrium anteroseptum). (B) The dark blue dot in the left atrium represents the best pace mapping site. The activation map in the right atrium was performed during the atrial tachycardia. CS, coronary sinus; HRA, high right atrium; RV, right ventricle.

mechanical bump of catheter manoeuvre (Pentaray NAV) and was never induced thereafter. Atrial tachycardia was assumed to be originated from the left atrium (LA). Following a trans-septal puncture, the local potential in the LA during sinus rhythm was evaluated. Automatic electrical activities of the recipient heart were observed in the LA posterior wall and four pulmonary veins, which were dissociated from the donor rhythm. A line of sites with the dissociated two rhythms revealed the anastomosis line between the donor and the recipient heart. The anastomosis line in the LA could be projected in an electroanatomical mapping system by tagging these sites (Figure 1). In atrial pace mapping,¹ the LA anteroseptal wall in the donor site adjacent to the anastomosis showed the best pace map that approximated the configuration of P wave and intracardiac electrograms of the clinical AT. This site was just opposite to the earliest activation site in the RA. We identified this site as the origin of the AT, and radiofrequency (RF) catheter ablation was performed (Figure 2). The AT did not recur during 1 year of follow-up. Previous studies reported focal ATs arising from a low-voltage area in the RA adjacent to the anastomosis line² and ATs from a recipient LA conducting to the donor

atria.³ To the best of our knowledge, this is the first report of focal AT originated from the donor LA after heart transplantation and treated with catheter ablation.

Conflict of interest: none declared.

Author contributions: S.K. and Y.M. conceived, designed, analysed, and interpreted data; S.K., Y.M., A.C. drafted the manuscript and revised it critically for important intellectual content; and H.T. approved the final manuscript submitted.

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