

Identification of fiber orientation in left free-wall accessory pathways implication for radiofrequency ablation.

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摘要

Abstract

Previous reports on the anatomic discordance between atrial and ventricular insertion sites of left free-wall accessory pathways were limited and their findings were controversial. The purpose of this study was to explore the fiber orientation and related electrophysiologic characteristics of left free-wall accessory pathways. The study population comprised 96 consecutive patients with a single left free-wall accessory pathway (33 manifest and 63 concealed pathways), who underwent electrophysiologic study and radiofrequency catheter ablation using the retrograde ventricular approach. The atrial insertion site of the accessory pathway was defined from the cinefilms as the site with the earliest retrograde atrial activation bracketed on the coronary sinus catheter during tachycardia, and the ventricular insertion site was defined as the site where successful ablation of the pathway was achieved. Forty-two patients (44%) had their atrial insertion sites 5-20 mm (10 +/- 3 mm) distal to the ventricular insertion sites (proximal excursion), 30 (31%) patients had their atrial insertion sites 5-20 mm (12 +/- 3 mm) proximal to the ventricular insertion sites (distal excursion), and 24 (25%) patients had directly aligned atrial and ventricular insertion sites. Retrograde conduction properties, including 1:1 VA conduction and effective refractory period, were significantly poorer in the pathways with proximal excursion (302 +/- 67, 285 +/- 61 ms respectively) than in those with distal excursion (264 +/- 56, 250 +/- 48 ms respectively) or direct alignment (272 +/- 61, 258 +/- 73 ms respectively). Accessory pathways at the more posterior location had a significantly higher incidence of proximal excursion (P = 0.006), and those at the more anterior location had a higher incidence of distal excursion (P = 0.012). In conclusion, a wide variation in fiber orientations and related electrophysiologic characteristics was found in left free-wall accessory pathways. This may have important clinical implications for radiofrequency ablation.