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1: [J Cardiovasc Electrophysiol.](#) 2001 Jul;12(7):750-8.

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Identification and catheter ablation of extracardiac and intracardiac components of ligament of Marshall tissue for treatment of paroxysmal atrial fibrillation.

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INTRODUCTION: The ligament of Marshall is a left atrial neuromuscular bundle with sympathetic innervation that may be a source of atrial fibrillation (AF)-inducing automatic activity. **METHODS AND RESULTS:** Twenty-four patients with paroxysmal AF (including 18 with adrenergic AF) and 25 with other arrhythmias underwent catheter mapping. In cases of adrenergic AF, radiofrequency ablation was attempted when Marshall potentials were recorded. Patients were followed for 2 months before and 11.2 +/- 4.2 months after the procedure. Catheterization of the distal superoposterior coronary sinus was feasible in 14 patients with AF (10 with adrenergic AF) and 12 patients without AF. A discrete Marshall potential was recorded in 12 patients with AF versus 3 patients without AF (P = 0.004). In 10 patients with adrenergic AF, this potential followed the atrial electrogram during sinus rhythm by 26 +/- 5 msec on left atrial recordings and 24 +/- 4 msec on coronary sinus recordings, and preceded it during atrial ectopy by 29 +/- 5 msec and 26 +/- 5 msec, respectively. It was abolished by epicardial (n = 1), endocardial (n = 4), or combined epicardial and endocardial ablation (n = 5). Seven patients with ablation showed significant reductions in adrenergic AF, whereas no significant change was seen in 8 adrenergic AF patients not undergoing ablation (P = 0.004). No improvement was seen in 3 of 4 patients with only endocardial ablation, whereas all 6 patients with epicardial ablation improved (P = 0.033). **CONCLUSION:** Recording of Marshall potential is feasible in patients with paroxysmal AF. Combined epicardial and endocardial catheter ablation of ligament of Marshall tissue may reduce the paroxysms of adrenergic AF.

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