LETTER TO THE EDITOR

Relation among effective refractory periods, conduction velocity and Cox-maze procedure

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Key words: *Atrial fibrillation; Conduction velocity; Cox-maze procedure; Effective refracroty periods; Surgical ablation.*

Palabras clave: *Fibrilación auricular; Velocidad de conducción;Período refractario efectivo; Procedimiento de Cox-maze; Ablación quirúrgica.*

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I thank the authors the kind response to my previous letter [1]. However, the critical mass concept in a large left atrium needs to be clarified. As I stated in my previous letter [2], "atrial remodeling with an increase in atrial fibrosis is a pathologic condition in which the conduction velocity as well the effective refractory periods (ERP) can be shortened in both atria". That means to say, slower conduction velocities. Indeed, Falk has shown that atrial remodeling, with increased atrial fibrosis, can result in slow conduction velocities as well as shorten refractory periods, especially in long-standing AF [3,4]. In addition, Byrd et al [5] demonstrated that the probability of AF increases as the amount of tissue available to fibrillate increases, as well as the ERPs becoming shorter. Hence, the probability of AF development is highly associated with increasing tissue area and decreasing ERP. The clinical impact of the aforementioned is of paramount importance to understand the problem of the increased maze failure rates in patients with enlarged atria, fibrotic atrial tissue and reduced ERP.

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