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Surgical isolation of the pulmonary veins for atrial fibrillation: The reality!

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Background: Pulmonary vein (PV) isolation has been the cornerstone in the treatment of atrial fibrillation (AF). Many doubts exist about permanent total disconnection of the PV after catheter-based techniques. Surgical division of the PV is the most convincing technique to avoid any further reconnection. We believe this way is the clearest one to investigate how effective PV isolation alone is in the treatment for atrial fibrillation.

Material & Methods: From 1998 to 2010, we operated on 120 adult patients having rheumatic mitral valve disease and concomitant AF. All of them had long-standing persistent AF (> 1 year of duration). PV isolation was performed surgically by means of cut-and-sew in all these cases of mitral valve surgery. All patients were analyzed at three months, six months, one year, and once yearly after operation. Registers were recorded arising from Holter and Echocardiographic study during the follow-up to seven years.

Results: Follow up completed at 93% for seven years. There was only one operative death (0.8%), and seven more along the follow-up. The end point was free from any AF, flutter or atrial tachyarrhythmia. Any type of tachyarrhythmia was present at 39%, 47%, 63%, 68%, and 70% at 3 months, one year, three years, five years, and seven years. The odds ratio for AF recurrence at seven years was 2.33 (95% CI, 1.46-3.71; $p < 0.001$). Left atrial size > 6.5 cm in diameter was directly related to AF recurrence at seven years after surgery (odds ratio= 8.25 [95% CI, 2.84-24.25; $p < 0.001$).

Conclusions: By dividing PV surgically, there is no doubt about definitive and complete PV disconnection. Surgical isolation of the PV is not enough to eliminate long-standing persistent AF. More complex procedures such as maze procedure should be considered to treat surgically the AF, especially long-standing persistent AF.

Biography

Ovidio A Garcia-Villarreal is a Cardiac Surgeon dedicated to the private practice, retired from the Social Medicine. He is the Past President of the Mexican Society of Cardiac Surgery, and the current President of the Mexican College of Cardiovascular and Thoracic Surgery. He has been working on the mitral, aortic and tricuspid reconstruction for more than 25 years. He has been pioneering in the field of Cardiac Arrhythmia Surgery, especially in Atrial Fibrillation Surgery (Cox-maze procedure) as well as in aortic valve sparing operations in Mexico. He has implemented national surgical models for valvular heart reconstruction and maze procedure. He has been also dedicated to clinical research, with more than 50 international publications in PubMed and Editor-in-Chief of the journal *Cirugia Cardiaca en Mexico*, and reviewer of more than 15 international journals. He is active member of the Mexican Society of Cardiac Surgery, Society of Thoracic Surgeons, European Association of Cardiothoracic Surgery, amongst others.

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