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Minimally-invasive radiofrequency ablation for atrial fibrillation

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Abstract

Atrial fibrillation(AF) is the most common cardiac arrhythmia. Nearly 2.2 million individuals in the United States and 4.5 million in the European Union have AF. In developed countries, the number of patients with AF is likely to increase during the next 50 years, owing to the growing proportion of elderly individuals. In AF, the normal regular electrical impulses generated by the sinoatrial node are overwhelmed by disorganized electrical impulses usually originating in the roots of the pulmonary veins, leading to irregular conduction of impulses to the ventricles which generate the heartbeat. Radio frequency ablation (RFA) is a medical procedure where part of the electrical conduction system of the heart tissue is ablated using the heat generated from the high frequency alternating current . Bipolar radiofrequency ablation is performed by clamping the tissue and heating it between the two electrodes until irreversible protein denaturation occurs, later the tissue dies and turns into a scar without causing collateral damage to surrounding tissues.

We have conducted a retrospective study of 25 patients ,who underwent minimally Invasive Bilateral Pulmonary Vein Isolation with left appendage exclusion either through a minithoracotomy or total thoracoscopic approach using Bipolar Radiofrequency Ablation with average follow-up time of 18 months, which showed that the procedure is a feasible and effective treatment with encouraging long term results for selected patients with lone atrial fibrillation.

Biography

Murad Abdelsalam received his MD degree from the Al-Arab Medical University, Benghazi, Libya, and became an associate faculty after graduation. . Currently he is finishing his medicine residency at Harrisburg Hospital / Pinnacle Health System. During that time he joined Pinnacle Health Cardiovascular Institute as a research scientist and was involved with multiple project about Hybrid Coronary Revascularization and Atrial fibrillation radiofrequency ablation both using DaVici robotic assistance. He had multiple publication including original articles, case reports and Abstracts in peer reviewed journal including JACC, Heart (BMJ) and Texas heart institute.