Imaging technique may prevent injury during ablation for atrial fibrillation

August 22 2006

A new imaging procedure may reduce the risk of esophageal injury in patients undergoing catheter ablation for atrial fibrillation (AF), according to a study published in the September 2006 edition of Heart Rhythm. Researchers used intracardiac echocardiography (ICE) to provide real-time imaging of the esophagus to gauge the power, temperature and duration of the ablation, and to monitor the development of lesions and other potential complications that may result from ablation.

The study, involving 152 patients who underwent left atrial ablation for AF, is the first to identify the esophagus and monitor lesions, known as atrio-esophageal fistulas, on the posterior wall of the heart's left atrium with ICE.

"ICE imaging could be a valuable tool to protect patients from esophageal injury and help physicians do no harm," says Francis Marchlinski, M.D., director of the University of Pennsylvania's electrophysiology program and an author of the study. "Although this complication is rare, it results in high mortality."

In an accompanying editorial, Hugh Calkins, M.D., professor of medicine and director of the electrophysiology lab at Johns Hopkins Hospital, writes "There is no question that those involved with catheter ablation of AF urgently need a method to protect the esophagus and prevent further atrio-esophageal fistulas. And based on the results of this study, it appears that ICE may have promise in this regard."

Dr. Calkins writes that development of these lesions on the esophagus is "Perhaps the most feared, and most lethal of the many complications that have been associated with this procedure…with mortality in excess of 75 percent."

The editorial concludes that while the experimental procedure shows promise, the study does not prove that ICE will prevent esophageal injury in the future and that more studies are needed.

AF is the most common sustained heart rhythm disorder, affecting more than two million people in the United States. In patients who have AF, the electrical signals that coordinate the muscle of the upper chamber of the heart (the atria) become rapid and disorganized, resulting in an irregular heartbeat often greater than 300 beats per minute. AF has been shown to increase significantly the risk for congestive heart failure and stroke.

Source: GYMR