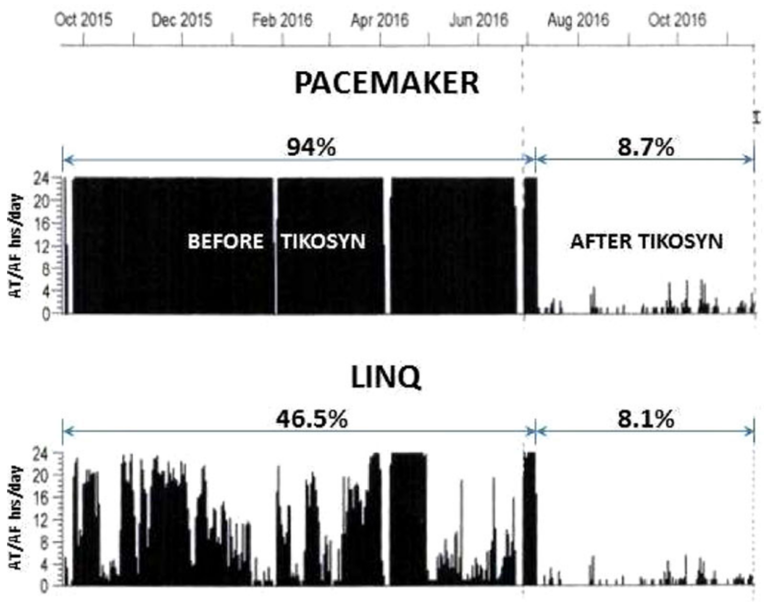
AF comparison between LINQ and pacemaker



AFS-2018-3 | Utility of three-dimensional rotational angiography during endoscopically guided laser balloon ablation of atrial fibrillation: A case study

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Introduction | Objectives: Case Report: Three-dimensional (3D) rotational angiography to identify a small right inferior pulmonary vein (PV) in the presence of a right middle vein during endoscopically guided laser balloon ablation of atrial fibrillation (AF)

Methods: Background: PV isolation (PVI) for the treatment of AF is a well-established interventional therapy. Variant PV anatomy such as a left common PV or right middle PV has been described in 24–33% of the AF population and can be a procedural challenge for current technologies. In the absence of preprocedure imaging, variant anatomy is often discovered intraprocedurally. The use of 3D rotational angiography immediately after transseptal puncture can provide valuable information to effectively guide the PVI procedure.

Results: Case Presentation: A 74-year-old female with a history of persistent AF refractory to amiodarone presented to the EP lab for *de novo* PVI using the endoscopically guided laser balloon ablation system. 3D rotational angiography was obtained prior to ablation and registered on the X-ray system. The endoscopic image of the right lower vein was initially thought to be the right inferior PV, however, upon commencement of ablation another vessel appeared at the posterior aspect of the vein. With further consultation of the 3D rotational cine, it was determined to be a more anterior middle PV with a small inferior PV just

FIGURE 1 [Color figure can be viewed at wileyonlinelibrary.com]

inferior and posterior (Figure 1). Using endoscopic and angiographic guidance, the right inferior PV was safely cannulated and successfully isolated.

Conclusions: 3D rotational angiography may be a useful tool during ablation with the endoscopically guided laser balloon ablation system to detect undiagnosed variant PV anatomy during PVI.

AFS-2018-4 | Long-term outcomes and cost savings of a fluoroless ablation method for atrial fibrillation without left atrial mapping

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Introduction | Objectives: Atrial fibrillation (AF) ablation typically requires significant radiation exposure, detailed left atrial mapping, and relatively long procedure times. We here report the long-term outcomes of a new, fluoroless ablation method designed to address these issues and compare them to a control group using the traditional, fluoroscopy-guided approach.

Methods: The first 50 consecutive patients who underwent AF (66% paroxysmal) ablation by a fluoroless approach using a contact force (CF) sensing ablation catheter were evaluated. Fifty other consecutives patients who underwent traditional, fluoroscopy-guided ablation served as the control. Immediately after double transseptal access guided entirely by intracardiac ultrasound (ICE), pulmonary vein isolation (PVI) was performed by antral ablation without left atrial mapping. In addition to PVI, selected patients (68%) also underwent ablation for flutter or non-PV triggers. Adenosine bolus infusion or high dose isoproterenol testing was performed in all patients.

Results: The total procedure time in the fluoroless group, defined as the time from vascular access to removal of all intracardiac catheters, was 90 ± 15.4 minutes in patients who only required PVI and 109.5 ± 22.9 minutes for the entire cohort. After the first 16 cases using a total of 36 seconds of fluoroscopy, the rest of the patients in the study and all of our subsequent AF ablations (> 100) were performed with zero fluoroscopy. After a mean follow-up of 12 months, 80% of the patients were free of AF and off antiarrhythmic drugs. No serious complications were observed in this cohort of patients. In contrast, the control group had a mean procedure time of 127.9 ± 38.2 minutes and fluoroscopy time of 20.6 ± 12.6 minutes with a 12-month success rate of 74%. Compared to other earlier ablation approaches at our center, the current fluoroless method resulted in cost savings ranging from $2,168 to $5,045 per case.

Conclusions: Modification of the traditional ablation approach along with the adoption of the CF sensing technology made it feasible to ablate AF without radiation exposure or left atrial mapping in an efficient, effective, safe, as well as cost-effective manner.

Cost Savings Per Case

http://www.conferenceabstracts.com/uploads/cfp2/attachments/GSSXJVZJ/GSSXJVZJ-394073-4-XLS(1).xlsx

Catheter combinations using standard methods	Cost savings per CASE
ICE, CS catheter, standard Lasso, THERMOCOOL ablation catheter	$2,905
ICE, CS catheter, Mapping Lasso, THERMACOOL	$3,332
ICE, CS catheter, standard Lasso, THERMACOOL, 20 pole EP catheter	$3,860
ICE, CS catheter, mapping Lasso, THERMACOOL, 20 pole EP catheter	$5,045
Cryoballoon (plus transseptal sheath), Achieve, ICE, CS catheter	$2,168
Cryoballoon (plus transseptal sheath), Achieve, ICE, CS catheter plus 4 mm ablation catheter for PVI touchup	$2,868
Cryoballoon (plus transseptal sheath), Achieve, ICE, CS catheter plus 8 mm ablation catheter and 20 pole catheter for flutter	$4,568

AFS-2018-5 | Investigation of pulsed electric fields for pulmonary vein and left atrial wall ablation in an acute and chronic porcine model

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Introduction | Objectives: Current AF ablation techniques, both surgical and catheter-based, are limited in their ability to create durable transmural lesions in atrial tissue. We evaluated the safety and performance of a novel catheter-based system employing pulsed electric fields (PEFs) applied to the epicardial surface to ablate the posterior left atrium and PVs in a porcine model.

Methods: Sixteen healthy swine were studied, acute (n = 6), 7-day (n = 7), and 28-day (n = 3) subjects were studied. The multielectrode PEF catheter encircled the PVs and posterior left atrium via the transverse sinus and pericardial reflections. Baseline phrenic nerve function was tested by direct pacing via quadripolar catheter. PEF energy was then applied to the epicardial surface, followed by testing of phrenic nerve function.

Results: The PEF catheter was successfully delivered and ablation was performed in all subjects. Phrenic nerve function was unchanged from baseline after ablation in all animals. No evidence of esophageal or other collateral injury was found at necropsy. Electroanatomical mapping showed broad, continuous lines of electrical block along the path of the catheter (figure). Note that 97% (34/35) of chronic slides submitted for histological analysis showed transmural lesions (figure).

Conclusions: Use of PEF ablation via an epicardial catheter-based system for creation of continuous transmural lesions is both safe and feasible in a healthy porcine model. The high rate of lesion transmurality and absence of collateral tissue damage indicate the promise of this technology for clinical application.