

Hello Milan! Doctor in Boston performs AF ablation live via satellite on patient in Italy

May 19, 2006 | Michael O'Riordan



Boston, MA - One of the concepts behind robotic and magnetic navigation in electrophysiologic procedures is to allow tired EPs under the heavy strain of lead to get off their feet and work remotely. That concept was taken to extremes this week at the **Heart Rhythm Society (HRS) 2006 Scientific Sessions** as **Dr Carlo Pappone** (San Raffaele University Hospital, Milan, Italy), working the controls in Boston, MA, performed a live AF ablation on a patient almost 4000 miles away in Milan, Italy.

"Very few physicians are able to treat patients with atrial fibrillation because the learning curve for this procedure is very long," Pappone told **heartwire**. "As magnetic navigation technology becomes more readily available and cheaper to install and use, it will increase the number of physicians able to ablate atrial fibrillation. To shorten the learning curve, we need to create a strategy to support the new centers to get them trained more quickly and to provide them with experienced centers as backup. A satellite setup like this would permit a new center to be guided by very expert centers. The patient can benefit from doctors with the most experience in this field."

Ablating atrial fibrillation 4000 miles away

Not surprisingly, the live case demonstration had a large "wow" factor attached to it, with many meeting attendees impressed by the technology. In addition to the distance, ablation of AF is typically not a very easy ablation procedure, but Pappone was able to complete the case in under an hour, a time that is extremely difficult for most operators to accomplish manually.

Speaking with **heartwire**, Pappone said the male patient was 34 years old and had a history of juvenile AF. He had previously failed antiarrhythmic drug therapy with flecainide, sotalol, and propafenone alone or in combination and was in persistent AF—experiencing daily symptomatic episodes—since June 2005. Heart function and structure were normal.

A senior clinician and staff, present in the Milan lab and ready to intervene should complications arise, inserted the catheter into the groin. From there, Pappone took over the controls in Boston and via a secure satellite link was able to manipulate the catheter with the magnetic navigation system (Stereotaxis, St Louis, MO) to perform the ablation. Pappone completed the ablation in 50 minutes, and the whole procedure was performed without complications.

There was a slight lag—the time between moving the controls in Boston and the eventual movement of the catheter in Milan—of approximately 1/10 of a second, but this did not interfere with the ability to perform the procedure. Asked why he wanted to participate in such a unique live case, Pappone said it was important to show that it could be done. He envisions the remote



Dr Carlo Pappone

aspect of the system being used to teach other electrophysiologists in different cities, countries, and continents, working with them to treat, guide, or provide support in their earliest AF-ablation cases.

To prepare for the case, Pappone said he conducted practice sessions at a training facility, remotely using the system approximately 100 m away from the cath lab.

Cost still an issue

While many meeting attendees were impressed by the technology, some wondered whether using the system remotely, from the US or Europe and connected to a distant smaller center, is feasible in the real world. The biggest obstacle, naturally, is that the regional hospital would require the magnetic guidance system to be in place. With the system costing approximately \$2 million, this is not always in the budget. Still, Pappone is an optimist and envisions more and more hospitals and private practices gaining access to the technology. "(...)"

Commenting on the live case for **heartwire**, **Dr Anne Curtis** (University of South Florida, Tampa), the outgoing president of the HRS, said that the distance between the patient and Pappone was attention-grabbing. She said it is possible for such systems to be used as a teaching tool with less experienced centers, especially if it allowed them access to high-volume operators and their expertise, but that there are barriers. "Right now, cath labs are expensive enough, and this greatly increases the cost," she said.

In a separate symposium, **Dr Walid Saliba** (Cleveland Clinic) took the podium to answer the million-dollar question concerning robotic and magnetic navigation: is it worth the money? According to Saliba, making his conclusions at the beginning of his presentation rather than at the end, the answer is obvious.

"If you have the money, go for it," said Saliba.

During the well-attended session, Saliba said new technology ultimately comes down to whether the new systems are safe and as efficacious as existing methods and whether or not they offer an advantage over manual navigation. He noted that with AF ablation, clinicians often struggle with keeping the catheters in position as well as accessing difficult-to-reach locations. Both robotic and magnetic navigation offer advantages here, as the catheters can be deflected easily and held in place better than by manual navigation, he said. In addition, the data are continuing to support the use of robotic and magnetic navigation for successfully treating various arrhythmias, often with less fluoroscopy time, he said.

Access to theheart.org is free, and is available only to healthcare professionals, media representatives, and medical librarians. To register as a user of theheart.org, click: <http://www.theheart.org/>