

## Specialty Diagnostic Approach: One Platform For Multiple Types of Complex Ablations

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Dr. Irwin received his MD from Penn State University Hershey PA. He completed his internal medicine residency at University of Pittsburgh, Presbyterian and Veterans Administration Hospitals (Pittsburgh, PA), and fellowship training in Cardiology/Electrophysiology and Pacing at Duke University Medical Center (Durham, NC). Currently, he serves as the Co-Director of the Advanced Center for Atrial Fibrillation, St. Joseph's Hospital, Tampa Florida.

### Introduction

Complex arrhythmias are becoming increasingly common in today's Electrophysiology lab. Frequently when going into the procedure, it is not clear what will be found and in which chamber the arrhythmia originates. In these complex procedures the Bard Conformata™ catheter has become a diagnostic work-horse in our lab.

### Specialty Electrode Spacing

The catheter is a 20-pole steerable catheter with two sets of 10 poles (Bard Electrophysiology, Lowell MA). The spacing of each 10 pole set is 2-8-2 with a 60 millimeter gap between set one and set two. This allows one set of the 10 poles to lie against the Christa terminalis and the other set of poles in the Coronary Sinus (CS).

This arrangement of poles makes it possible to record activation over both right and left atria and provides a platform to pace in both atria for arrhythmia induction and entrainment of a spontaneous or induced arrhythmia.

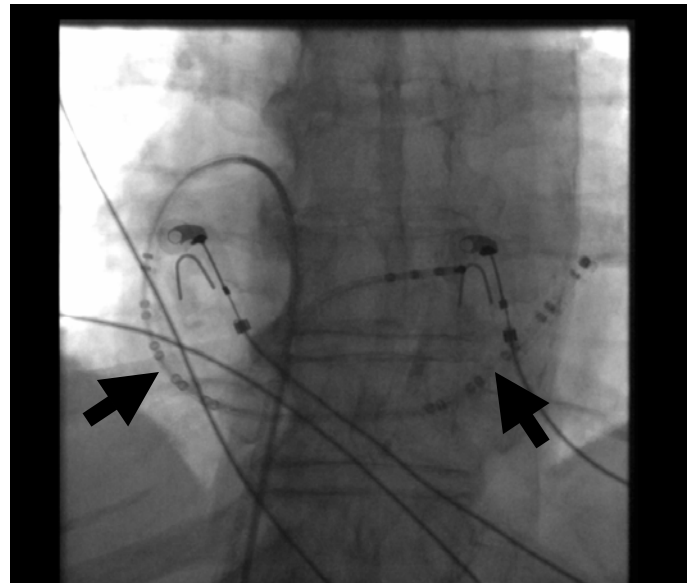


Figure 1 – Conformata catheter from an inferior approach

### Placement Techniques

The placement of the catheter can be accomplished from an inferior or a superior approach.

The superior approach allows easy placement of the catheter by using electro-cardiographic guidance. The bi-directional steerability of the catheter and the soft distal tip makes it easier to place than most standard CS catheters. The steerability and soft tip also allows the catheter to be directed into a branch of the CS, and if necessary, force the proximal pairs of electrodes along the Christa terminalis.

The inferior approach is performed by advancing the catheter into the right atrium and deflecting into the right ventricle. A counter-clockwise torque of the handle will position the distal portion of the catheter along the Eustachian ridge with the tip pointing toward the Coronary sinus orifice. (See figure 1)

Using electrograms, the catheter is advanced along the AV ring and into the CS. The inferior approach has the advantage of forcing the proximal poles against tissue to make better contact with the Christa terminalis than the superior approach. In patients with a very large right atrium it is sometimes difficult to position the Conformata catheter in the RA from an inferior approach because of the tendency of the body of the catheter to prolapse into the Superior vena cava.

### Single Connection to Junction Box

Because the catheter has a single connection to the extension cable going to the junction box, it is easy to disconnect and reconnect to relieve built up torque in the tail of the catheter. The one connector tail is sturdy enough to withstand the built up torque which can occur during catheter placement.

**Application for Various Indications**

The Conforma catheter is well suited for mapping and pacing functions required for the ablation of various Supra Ventricular Tachycardias (SVTs). This catheter is ideal for isthmus dependent flutter. It is much easier to place than a Halo-type catheter and the electrograms are easy to interpret. (See figure 2 and 3)

Bi-Directional Block can easily be evaluated by pacing the low right atrium and the CS. (See figure 4) With the Conforma catheter in position it can also be used during the evaluation and ablation of mitral annular flutter. Pacing the portion of the catheter in the CS can confer the diagnosis of mitral annular flutter by entrainment and can confirm completion of ablation in the Left inferior vein to CS by distal CS pacing. (See figure 5)

**Conclusion**

The Conforma catheter is well suited for use in Atrial Tachycardias to map in order to determine which chamber the arrhythmia originates from and to pace in order to pull Pulmonary vein signals from atrial potentials. I know that whatever arrhythmia we encounter during the course of an EP study, the Conforma catheter is well suited because of the 20-poles positioned in critical places in the heart to significantly simplify the EP procedure.

**Disclosure**

The opinions and clinical experiences presented herein are for informational purposes only. The results from this case study may not be predictive for all patients. Individual results may vary depending on a variety of patient specific attributes. The physician has been compensated by Bard Electrophysiology for the time and effort in preparing the above case study for its further use and distribution.

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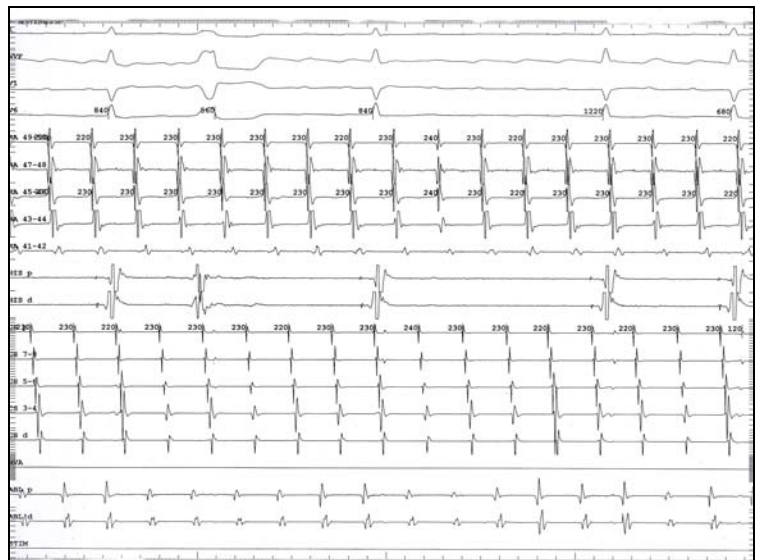


Figure 2 - Counter Clockwise flutter recorder on Conforma catheter

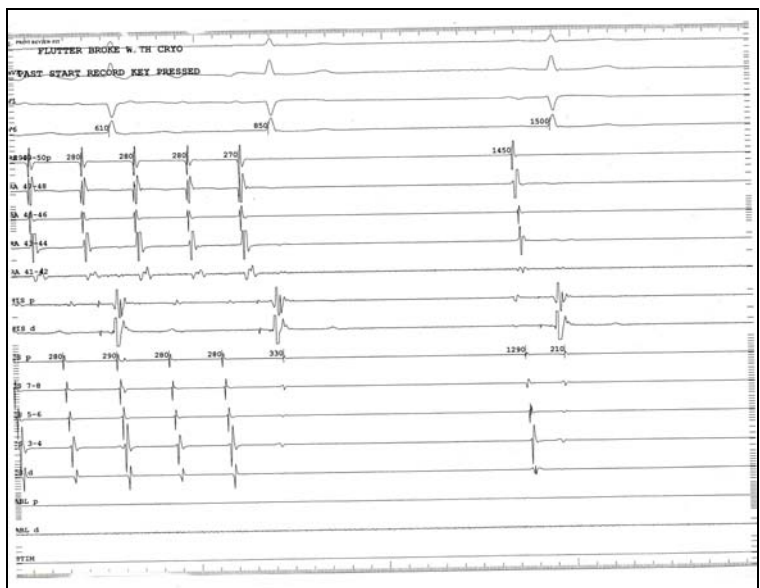


Figure 3 - Flutter terminating during ablation.

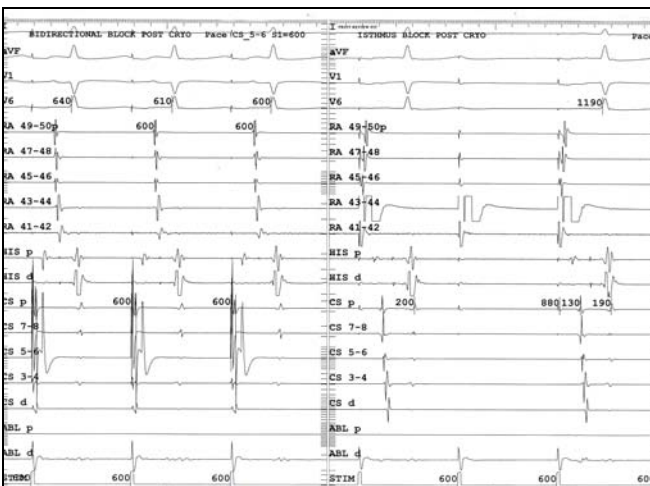


Figure 4 - Confirming bidirectional block post ablation by pacing the low Right Atrium and Coronary Sinus

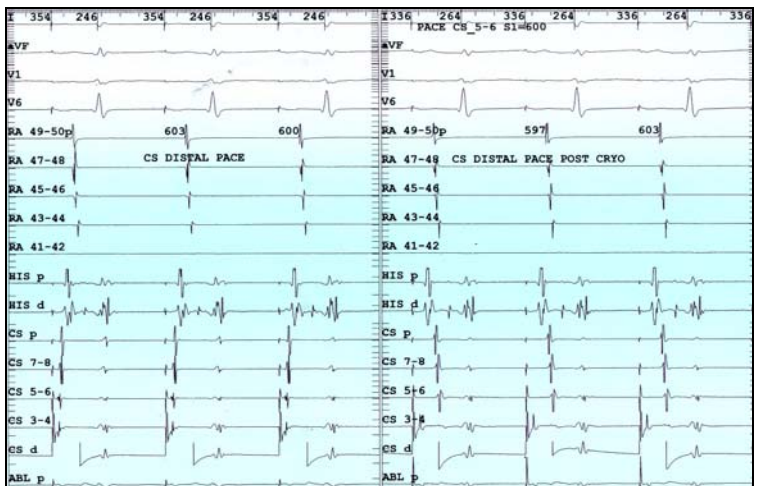


Figure 5 - Confirming Block following ablation for mitral annular flutter