

Fluoro-less AVNRT Ablation for the pregnant female

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Case

- ❖ 26-year-old female with palpitations
 - 21 weeks gestation

HPI

- ❖ SVT during her C-section after 1st pregnancy
- ❖ Four episodes in the next four yrs
- ❖ This pregnancy, increased palpitations
 - ❖ Associated with nausea, neck pulsations, and chest pain
 - ❖ Four emergency room visits requiring adenosine up to 12 mg for therapy

Workup

- ❖ Laboratory work and echocardiogram was unremarkable
- ❖ Cardiac monitoring showed SVT at around 195 bpm

Medical therapy

- ❖ Failed Verapamil
- ❖ Metoprolol
- ❖ Digoxin
- ❖ Magnesium

Considerations

- ❖ Patient is symptomatic
- ❖ Refractory to medical therapy
- ❖ Beta blockers and calcium channel blockers
 - ❖ Some animal intrauterine growth retardation
 - ❖ Can crossover into the breast milk

Radiation burden

- ❖ Fluoroscopy guides navigation of the ablation catheter to the target site
- ❖ “Necessary evil”
- ❖ Rates of cancer are increasing
- ❖ Practitioner exposure
- ❖ Lead induced orthopedic concerns

Fetal risk

- ❖ Reduction in IQ
- ❖ Incidence of Miscarriage
- ❖ Major malformations
- ❖ Growth retardation

Fluoro-less AVNRT ablation

- ❖ Intracardiac Echocardiography (ICE)
- ❖ Catheter-based 3D electroanatomic mapping (EAM)
- ❖ Impedance based mapping

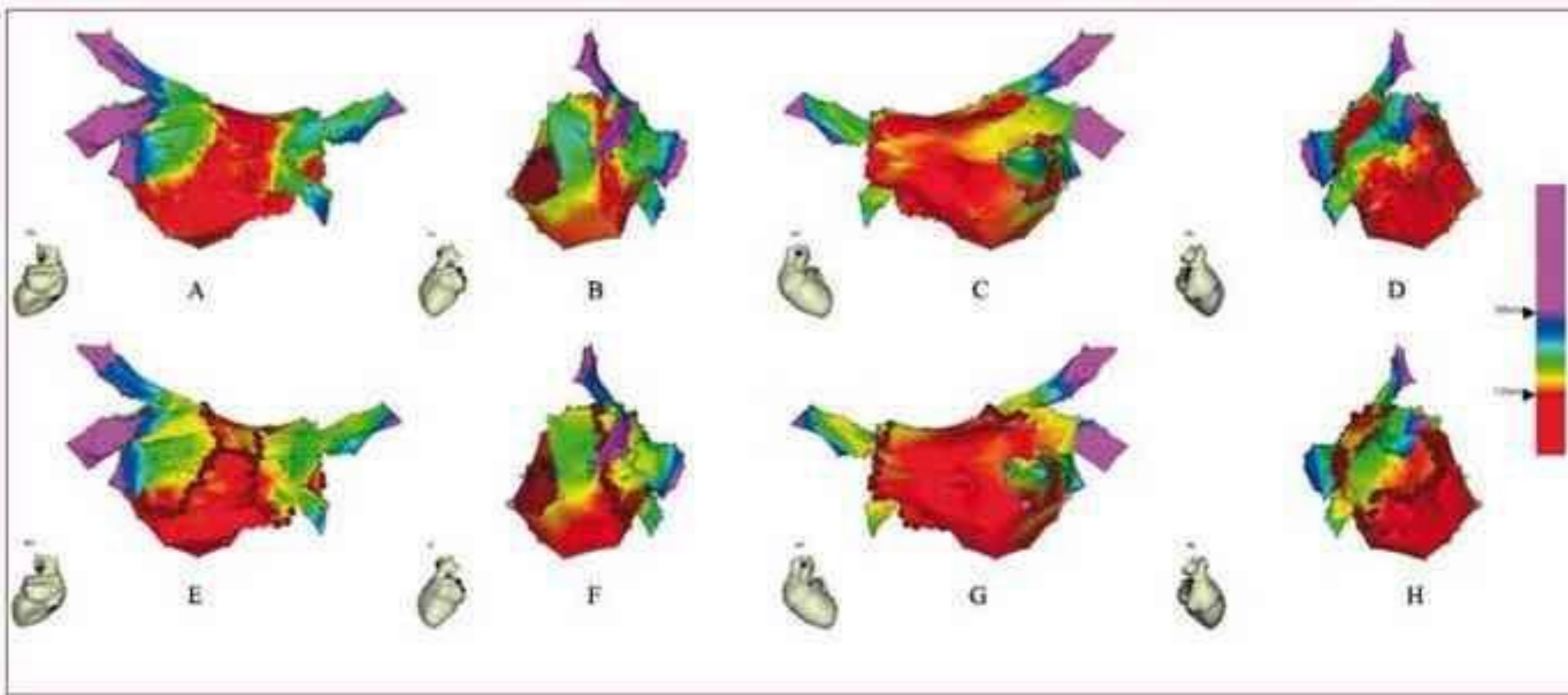
ICE

- ❖ Ultrasound enabled catheters
- ❖ Allow for real time visualization of right heart structures
- ❖ Confirm stable and complete catheter-tissue contact
- ❖ Micro-bubble monitoring
- ❖ More successful and with fewer embolic complications than w/o ICE in AF ablation
- ❖ Reduces Fluoro time

EAM

- ❖ Conceived to provide the ability to monitor catheter movement without fluoroscopy
- ❖ Ultralow magnetic fields to locate sensor positioned near the tip of a regular mapping and ablation catheter.
- ❖ Data of the catheter location + intracardiac electrogram are reconstructed as a 3D geometric map
- ❖ Create cardiac geometry and monitor marked mapping and ablation points

Impedance based mapping



Treatment

- ❖ Fluoro-less electrophysiological study
 - ❖ NavX + ICE
- ❖ Programmed stimulation revealed induced typical AVNRT
- ❖ Treated with radiofrequency ablation of the slow pathway
- ❖ All medications were discontinued

Resolution

- ❖ One month post procedure, she reported being asymptomatic since ablation
- ❖ At 39 weeks, she underwent uncomplicated C section.

Fluoroless AVNRT ablation

- ❖ ICE, EAM, Impedance based mapping, Newer modalities
- ❖ Offer 0-minimal Fluoro exposure mapping/ablations
- ❖ Should be considered in pregnancy
- ❖ Should expand in the coming years outside of pregnancy

Questions?
