EP

Anesthesia

CRNA Handbook

TEAM,

Thank you for providing anesthesia services for our patients. Your role is vital to the success of our Electrophysiology Program, and we recognize the dedication it takes to be excellent in this specialized environment.

Our vision is clear: to provide exceptional care through excellence, innovation, and teamwork.

We encourage you to embrace this partnership where collaboration and clinical excellence go hand in hand. Your services are foundational to patient success.

Sincerely,
AHN Electrophysiology Department

EP ANESTHESIA CORE CONCEPTS

Communication Is Essential

Safe and Efficient Parallel Workflow

Hierarchy of Anesthetics That Inhibit Arrhythmia Inducibility

Why IV Lidocaine Should Not Be Given During Certain Ablations

Why Ventilation Changes and Patient Movement Degrade Anatomical Mapping

PULMONARY VEIN ISOLATION (PVI)

Principles

Anesthesia: General

IV access: 1 peripheral IV
1 Central Venous access provided by EP Physician via femoral sheaths

Arterial Line: Routinely **NO**, Considerations for A-lines are discussed by Anesthesia & EP DOC

Workflow

1. Induction and Intubation with parallel EP workflow without patient safety compromise
2. **Initiation of HIGH FREQUENCY LOW TIDAL VOLUME Ventilation (HFLTV)**
    a. **EXAMPLE Starting Settings (28 Frequency, Tidal Volume approximately 180-250ml; 3ml/kg; minute ventilation 5-8L/m**
    b. **Prior to mapping, titrate 10-20ml increments to adjust Tidal Volume for ETC02 optimization;** individualized to patient size/lung mechanics/ and C02 response in accordance with department protocols
3. Heparin Administration by anesthesia with associated ablation catheters
    a. Inform EP physician patient's weight in (kg) for Heparin Dose during timeout
4. Right Femoral Venous access by EP physician and will provide venous line for CRNA
5. ACT sample draw immediately by CRNA after venous access
6. Anatomical mapping of Left atrium and Pulmonary Veins ***(ventilation changes must be done prior to this step)***
7. Isolation of pulmonary veins
8. Attempt to reinduce arrhythmia
9. 10-minute warning by EP physician to CRNA for anesthesia emergence preparation
10. Protamine Administration and cessation of HFLTV.
11. Emergence and EP Catheters removal/closure device/pull in PACU
12. Transport to post procedural unit

General Anesthesia Modalities and Considerations per ABLATION CATHETER*
Choice of Ablation catheter noted in Preview

Ablation Catheter	**Qdot RF**	**Farapulse PFA**	**Sphere 9 PFA**	**VariPulse**
Mapping System	**Carto (J&J)**	**Opal (Boston)**	**Affera (Medtronic)**	**Carto (J&J)**
Ventilation	**JET/HFLTV**	**HFLTV**	**HFLTV**	**HFLTV**
Esophageal Cooling Catheter	**Yes** **EP RN Will assist**	**No**	**No**	**No**
Paralysis	**No**	**Yes**	**Yes**	**Yes**
Fluoroscopy	**No**	**Yes**	**(+/-)**	**No**
Atropine/Glycopyrolate	**(+/-)**	**Yes**	**(+/-)**	**(+/-)**
Nitroglycerin*	**No**	**Yes**	**No**	**(+/-)**
1st dose Heparin Given By	**Anesthesia**	**Anesthesia**	**Anesthesia**	**Anesthesia**

INFORMATION PAGE

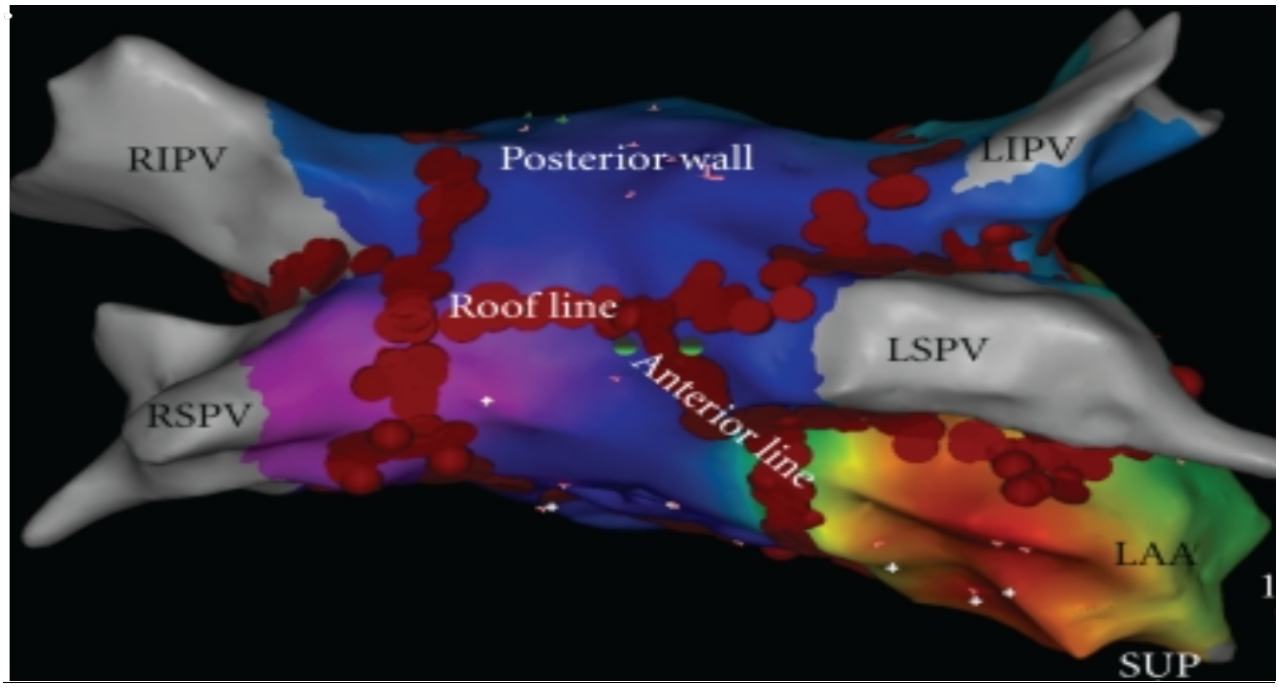
Purpose: Maintain sinus rhythm. This is accomplished by isolating electrical signals commonly arising from the pulmonary veins in the left atrium.

3D MAPPING SYSTEM

Pacing of the heart at 100bpm for motion reduction of the catheter to optimize anatomical mapping

Ventilation adjustments need to be made prior to mapping

Cardioversion from AFIB to NSR for mapping optimization is common



Energy used for Ablation

Pulsed field ablation (PFA) uses non-thermal electrical energy to create lesions by selectively damaging heart cells through electroporation, while radiofrequency ablation (RF) uses thermal or cryoablation energy. *Consider esophageal cooling breaks when RF **is not** in contact with the posterior wall of the right atrium.*

Therapeutic Heparization

ACT 350-400

Complications

Cardiac Perforation/Tamponade	Atrio-esophageal Fistula (late)	Air Emboli
Access complications	Stroke	Retroperitoneal bleed
Coronary Vasospasm	Phrenic Nerve Injury	Hemolysis