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## Total Artificial Heart

Dianne L. Idman-Gervais, RN, CEN, MICN

The implantable, Total Artificial Heart Device, by SynCardia Systems, INC, is an air-driven pump that replaces the patient's own ventricles and valves, only the patient's native atria and pulmonary artery remain. It is used for those patients with End Stage biventricular heart failure. Currently the TAH-t is approved as a bridge to transplant device only. The TAH-t pumps up to 9 Liters a minute thru the artificial ventricles and helps improve the function of the patient's other organs, hopefully making them stronger transplant candidates.

When assessing a patient with the TAH-t you will be able to obtain a pulse, but it will be the rate set for the FREEDOM DRIVER (the driver that powers the pump). You will be able to obtain a BP, and O2 Saturation, but there will be NO EKG RHYTHM. A pacemaker or defibrillator can not be used with the TAH-t.

Currently, the devices are placed at Cedar's -Sinai Medical Center in LA. The only facility in San Diego, at this time, capable of caring for patients with these devices, is UCSD La Jolla who has the Big Blue Console the patient will need if there is a problem with their own machine (Freedom Driver).

Patient care plans are in place to notify The VAD Coordinators at Cedar Sinai as well as UCSD LA Jolla if there are any issues with these patients.

**EMS Personnel should follow directions of the VAD Coordinators or Base Hospital. As per SD County EMS Protocol S-127 VAD or Total Heart patients DO NOT perform compressions unless instructed by VAD or TAH Coordinator or base hospital**



The VAD Coordinators will be able to assist in trouble shooting. They suggest initially to:

1. Ensure pumps are working by getting vital signs.
2. Driver is audible and pumping
3. Ensure there is adequate battery power (3 green lights)
4. Ensure drivelines are intact and connected to the pump
5. The Coordinators can assist if the patient's own Freedom Driver fails and there is a need to transfer to a back-up Freedom Driver.

**Always bring all the patient's equipment, (Back up Freedom Driver, Extra batteries, and patient tool kit) and trained caregiver with them.**



# Ventricular Tachycardia versus SVT with a Wide QRS Complex

By

Mary Meadows-Pitt, RN, MSN, MICN, CEN

Determining if a patient is in ventricular tachycardia (VT) versus an supraventricular tachycardia (SVT) with a wide QRS complex can be a diagnostic challenge. The initial electrocardiogram (ECG) evaluation of any patient with a tachyarrhythmia should begin by evaluating the QRS complex to see if it is wide or narrow. For a wide complex tachycardia, it is vital to determine if the patient is in VT or has a rhythm that is supraventricular in origin, because the treatment is different, and treating a patient for the wrong rhythm can have potentially lethal consequences. When caring for a patient that is hemodynamically stable in a wide complex tachycardia, it is important to realize this does not rule out VT. This article will attempt to give a step by step approach in the management of wide complex tachycardia in relatively stable adult patients.

A widened QRS complex ( $\geq 120$  ms) usually represents a ventricular arrhythmia, originating below the bifurcation of the bundle of His, or it could be a supraventricular arrhythmia with aberrant ventricular conduction. Wide complex tachycardias are normally caused by one of the four following arrhythmias: (1) VT, (2) SVT with aberrancy due to conduction slowing or bundle branch block, (3) SVT with anterograde conduction over an accessory AV pathway, or (4) a wide QRS complex generated by ventricular pacing.

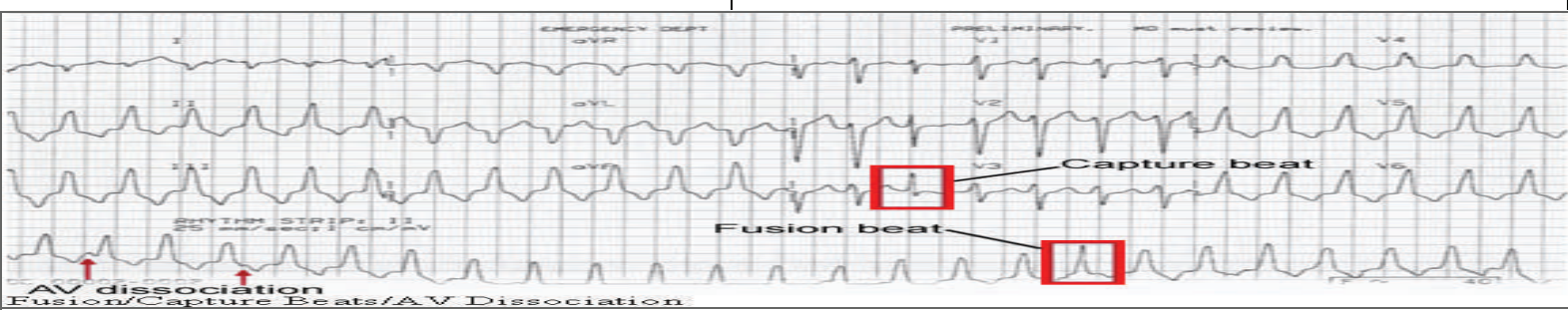
When treating a patient in an emergent situation it is often difficult to get a detailed history, but encountering a patient that is relatively stable in a wide complex tachycardia, the history can be key. In a patient with a history of advanced heart disease, VT is more likely than SVT. If they are on a Class 1 anti-arrhythmic, this may contribute to VT.

Age is an unreliable factor in differentiating VT from SVT, both of which can occur in a young or elderly patient. If the arrhythmia has been present intermittently for over 3 years, then SVT is more likely.

The presence of AV disassociation strongly suggests the patient is in VT. Fusion or capture beats often occur when there is AV disassociation, and this also suggests VT.

A QRS complex width  $>160$  ms has been shown to be a strong predictor of VT. When all QRS complexes in the precordial leads are either upright or negative, VT is strongly suggested. QRS complexes similar to previously seen PVCs suggests VT. If the patient is hemodynamically unstable, think VT and treat accordingly.

Comparison of Wide Complex SVT to VT	Comparison of Wide Complex SVT to VT ECG Differences
<p><b>Wide Complex SVT</b> *Arrhythmia present intermittently for <math>&gt; 3</math> years</p> <p><b>VT</b> *Patient has structure heart disease (hx of CAD, post MI, cardiomegaly, cardiac surgery) *Class I antiarrhythmic may contribute to VT Tricyclic antidepressants may contribute to VT</p>	<p><b>Wide Complex SVT:</b> *Rate—not usually helpful Regularity: paroxysmal SVT and atrial flutter 2 :1, regular *QRS <math>&gt; 160</math> ms in presence of class I antiarrhythmic</p> <p><b>VT:</b> *Rate 100-280, usually not helpful *Regularity-Monomorphic VT regular; polymorphic VT irregular *AV dissociation usually present *QRS width <math>&gt; 140-160</math> ms All QRS complexes are either positive or negative in the precordial leads</p>





# California ENA State Meetings 2012

## 2012 CALIFORNIA - SAN DIEGO CHAPTER 228

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Everyone is welcome at all state and local meetings. California ENA meets five times yearly beginning in January.

This year the “Annual Business Meeting” will be in August instead of September due to the National General and Scientific Assembly in San Diego September 11-15th.

### **ENA San Diego Chapter 228**

**When:** Meets monthly on the 3rd Tuesday

**Time:** 4:30 PM

**Where :** Sharp Spectrum

8695 Spectrum Center Blvd

San Diego, CA 92123

Please come and be a part of making a difference in your profession!

**Emergency Nurse’s Week**  
**October 7-13, 2012**

**San Diego**  
**ENA Chapter # 228**  
*has a Facebook page*  
*and can also be found*  
*on the CalENA.us*  
*website.*



**CONGRATUTIONS** to our San Diego ENA Spring Scholarship Winners!

**Thomas Berk**

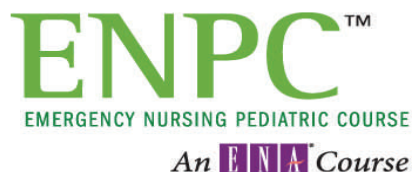
**Nicholas Hathaway**

**Michelle Brenholdt**

**Watch for Information on upcoming annual events!!**

**December 2012: ENA TEA ( Date and Location TBA)**

**April 2013: Annual 911 Conference ( Date and Location TBA)**



## Emergency Nurse Pediatric Course (ENPC)

October 26/27, 2012  
Rady Children's Hospital Plaza Bldg  
3665 Kearny Villa RD  
San Diego, CA 92123

Registration Deadline: October 12, 2012 (24 participants)

For further information contact:

Marty Hay

Home Phone: 619-464-8680

Email: [martyhayrn@gmail.com](mailto:martyhayrn@gmail.com)

## Upcoming San Diego TNCC Course Offerings

1. August 3rd and 4th, 2012 in LA Jolla  
Contact: Sharon Pacyna at 619-543-7191/  
[spacyna@ucsd.edu](mailto:spacyna@ucsd.edu)

2. October 5th and 6th, 2012 in San Diego  
Contact: Kathryn Ayers at 858-939-3200/  
[Kathi.ayers@sharp.com](mailto:Kathi.ayers@sharp.com)









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