

# v4.8 The Pulse and the Beat: EKG and Echo

Note the faculty assignments.  
 The assignments and durations of the lectures will not change.  
 All else is subject to change and re-arrangement and always does change.

Look at how you fit into the whole of the program. It is as if there is one talk, given by us all.

HOLD 15 PRODUCTION HOLD  
 4.00 Tape 10 PRODUCTION HOLD: Retrospective

## Part I: Patients and the problems

8.00 PAUL 1 Patient 1 PAUL 1 **We meet Paul (patient) and hear about his case**  
*. Paul is a patient that comes into the hospital for evaluation.*  
*. Rapid afib, AV nodal ablation and unipolar pacer 2 yrs ago*  
*. Infarction 7 mos ago, now ischemic CM, dyspnea*  
*. Unresponsive to meds*  
*. Now for swap to Bi-V*  
*. Paul comes in for an echo*

10.00 PANEL 4 PANEL: Introductions

15.00 Gilliam 1 Lecture 6.5 EKG and Echo: The sudden demand for service and therapies  
*. Electrical activity is followed by mechanical.*  
*. There are disorders out there all the time (look at next two talks for details/support)*  
*endocarditis (progressing to block)*  
*atrial fibrillation (LV function, TEE prior or not)*  
*pre-excitation syndromes (WPW)*

- non-compaction*
- infiltrative cardiomyopathy (sarcoid)*
- . *EP now interventional .... Need echo to select pts / evaluate therapy*
- Pathway obliteration*
- Device placement*
- . *Procedure complication, follow-up and optimization*
- . *Elevates echo and EP to new physiologic horizons*
- . *Opportunity for new patients .. Meet increasing demand for EP/echo services*

**19.00 Rigolin 1    Lecture    6.5    EKG disorders with echo implications: Uses and examples**

- . *Descriptions and examples*
- . *Complications of endocarditis*
- . *Pre-excitation syndromes (diagnosis and follow-up)*
- . *Atrial fibrillation (cardioversion, intervention, complications)*
- . *Infiltrative diseases*
- . *LV non-compaction*

**22.00 K/D/A/M/D    Echo lab    3    Echo Lab 1: Case of heart failure with congenital LV disease**

- . *18 y.o. with non-compaction*
- . *We see a patient where pacer placed*

**26.00 K/D/A/M/D    ANATOMY    10    Anatomy 1: Echo anatomy for EKG disorders**

- . *Begin to show us what we need to know.*
- . *Atrial appendage anatomy and details*
- . *Pulmonary vein anatomy*
- . *Atrial anatomy*
- . *Relationship of conducting pathways to AV valves*
- . *Differentiate regional and global performance*

**28.00 Pellerin 1    Lecture    6.5    Atrio-ventricular dissynchrony: Atrial fibrillation and echo**

- . *This is mostly atrial fibrillation*
- . *Give us the scope of the problem*
- . *What's the problem and what do we do about it.*
- . *Talk about how echo has impact.*
- . *Bring up LA size as a good or bad thing to measure*
- . *Talk about TEE and cardioversion. Show us examples.*
- . *Talks about AF ablations and need for guidance*

30.00 **K/D/A/M/D** Echo lab 5 **Echo Lab 2: Case evaluating the LA and its size**

## Part IIa: Methods and measuring

32.00 **Sogaard-Tape** TAPE 4 **Echo Lab 3: A case of LV dyssynchrony**

35.00 **Gorcsan 1** Lecture 6.5 **Dyssynchrony: Heart failure**

- . Differentiate regional and global performance
- . Explain inter and intraventricular dyssynchrony.
- . Give examples and talk about implications
- . Mention problem and benefits
- . Talk about Clinical Trials and implications for echo
- . Note deeper drilling into methods is coming up

37.00 **ERROL 1** Tape 4 **Echo Lab 9: Working up a patient**

- . Another patient comes in and we see the workup and people involved
- . We get the conclusions of this workup
- . We hear from the patient

39.00 **K/D/A/M/D** Anatomy 7 **Anatomy 2: Movement vs velocity: Thickening, velocity and excursion and their meaning**

- . The important factors and measures of ventricular wall movement
- . Differentiate regional and global performance

39.50 **PAUL 2** Patient 5 **PAUL 2 Paul being evaluated**

- . Paul has standard indices performed
- . 3D performed as well as DTI
- . Conclusions rendered
- . We'll have to wait to see what happens to Paul

40.00 **Sogaard 1** Lecture 6.5 **Current methods for determining dyssynchrony**

- . Differentiate regional and global performance

- . *M-mode* Time to peak
- . *Spectral Doppler* Delayed or diastolic contraction
- . *TDI* Excursion (wall-motion) M-mode/2D/3D
- . *3D*
- . *Strain (details on strain coming later)*

42.00 *Sogaard-Tape* **Tape** 4 **Echo Lab 4: A case of LV dyssynchrony**

HOLD 11 PRODUCTION HOLD

46.00 *Monaghan 1* **Lecture** 6.5 3D

- . *Go from the M-mode concept to 3D*
- . *Detail out the 3D approach, data and examples*

48.00 **PANEL** 5 **PANEL: Methods: Advantages and disadvantages**

127 Must be 120

**BREAK** 30

Part IIb: Methods and measuring

51.00 HOLD 15 PRODUCTION HOLD

**PANEL** 4 **PANEL: Methods: Advantages and disadvantages (*continued*)**

52.00 *Pellerin 2* **Lecture** 6.5 **Ventricular assessment of size, shape and function in EKG disorders**

- . *What are the end points for all this*
- . *Time>peak, diastolic contraction, wall movement*
- . *Differentiate regional and global performance*
- . *End points must be simple and easy*

54.00 *Rigolin 1*    Lecture    6.5    **Stress, strain and strain-rate: Meaning for everyday practice**  
    . *Introduce us to stress, strain and strain rate*  
    . *Be as simple as you can*

56.00 *Sogaard-Tap*    Tape    4    **Echo Lab 5: A case where strain and strain rate needed**

57.00 *K/D/A/M/D*    Demo    7    **Echo Lab 6: Common LV measures in EP patients**  
    . *We see the different methods*  
    . *And we see the methods for evaluation*  
    . *Common pitfalls and problems*

61.00            PANEL    7    **PANEL: Methods and measuring (*continued*)**

### Part III: Matching Patients to Therapy

64.00 *K/D/A/M/D*    Demo    7    **Demonstration: Common devices, their placement and use**  
    . *Adam shows us these devices*  
    . *Differentiat unipolar and bipolar pacerts*  
    . *Show us leads*  
    . *RV/LV placement*  
    . *Epicardial placement*  
    . *Starting to get really specific on placements and regions*

66.00 *Duke*            Tape    3    **A trip to the EP lab**

68.00 *K/D/A/M/D*    ANATOMY    8    **Anatomy 3: Relating devices to the heart: Presenting the echo target**  
    . *Relate echo views to what we learned before and what is to come*  
    . *We see the pacers and all the devices (held in hands)*  
    . *Do 3D and show us the mitral orifice view from below*  
    . *Relate everything to the Bull's eye as a communication tool*  
    . *Anatomy of coronary venous drainage so important for EP*  
        *Show us a pacing catheter go in.*  
    . *Adam places a device in the anatomical specimen*

72.00	Gorcsan 2	Lecture	6.5	<b>Selecting patients for CRT</b>	<ul style="list-style-type: none"> <li>. <i>What's the data (clinical trials)</i></li> <li>. <i>What are the standards</i></li> <li>. <i>Time to peak, systole in diastole and excursion</i></li> <li>. <i>Emphasize principals</i></li> </ul>
74.00	PAUL 3	Tape	5	PAUL 3 <b>Paul's Bi-V pacer insertion</b>	<ul style="list-style-type: none"> <li>. <i>We meet Francis Murgatroyd, the EP physician</i></li> <li>. <i>He takes us into the interventional lab</i></li> <li>. <i>We see Paul get his pacemaker</i></li> </ul>
75.00	Sogaard 2	Lecture	6.5	<b>Optimizing and recognizing patients who need it</b>	<ul style="list-style-type: none"> <li>. <i>What does optimization mean</i></li> <li>. <i>Methods for optimizing</i></li> <li>. <i>Can you give hints to recognize a patient who needs optimization</i></li> </ul>
77.00	Sogaard-Tap	Tape	4	<b>Echo Lab 7: A case for evaluating optimization</b>	<ul style="list-style-type: none"> <li>. <i>Peter does a quick evaluation on a pacemaker patient</i></li> </ul>
79.00	K/D/A/M/D	Demo	7	<b>Echo Lab 8: Working up cases and audience questions</b>	<ul style="list-style-type: none"> <li>. <i>Mark, Adam and Danny</i></li> </ul>
82.00	ERROL 2	Tape	4	<b>Echo Lab 9: A case for optimization procedure</b>	<ul style="list-style-type: none"> <li>. <i>Another patient comes in and we see the workup and people involved</i></li> <li>. <i>We get the conclusions of this workup</i></li> <li>. <i>We hear from the patient</i></li> </ul>
84.00		HOLD	15	<b>PRODUCTION HOLD</b>	
86.00	PAUL 4	Tape	3	PAUL 4 <b>Paul afterwards</b>	<ul style="list-style-type: none"> <li>. <i>Paul after the procedure</i></li> <li>. <i>We see the echo post device placement</i></li> <li>. <i>We hear from Dr. Murgatroyd and Paul</i></li> </ul>

88.00 *Gilliam 2*    Lecture    6.5    Even more demands: The next steps for the EKG and echo

94.00    PANEL    15    PANEL

<b>297.5</b>	<b>270 is allotted program time</b>
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