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Monday, February 11, 2008

Basic

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**Cardiac Anatomy – Image Plane Correlation/Basics of Echocardiography**

*Moderator: GS Hartman*

*Basic Challenging Cases– GS Hartman*

At the conclusion of this lecture, the participant will:

Understand the general scope of cases they should be able to understand and diagnose. Cases will be presented along with representative videos and sample questions. On Wednesday, these cases will be reviewed in detail.

*Probe Placement and Manipulation – GS Hartman*

At the conclusion of this lecture, the participant will:

- 1) Understand the technical aspects to facilitate probe insertion
- 2) Understand the technical aspects to facilitate probe insertion
- 3) Be able to identify the anatomic considerations impacting probe insertion and manipulation
- 4) Understand the relation of the standard probe positions and normal cardiac anatomy
- 5) Be able to identify their correlates to the standard – “SCA 20” views
- 6) Recognize the standard probe manipulation and scan plane nomenclature

*Principles of Ultrasound – AC Perrino, Jr.*

At the conclusion of this lecture, the participant will:

- 1) Understand the physical principles of ultrasound
- 2) Recognize ultrasound properties
- 3) Be able to explain ultrasound imaging principles

*Knobology for Image Optimization – LB Heller*

At the conclusion of this lecture, the participant will:

- 1) Be able to identify the physical principles behind the knobs on common echocardiography platforms
- 2) Know how to use common echocardiography platform functions to obtain 2-D and Doppler images

*Comprehensive Exam – JS Shanewise*

At the conclusion of this lecture, the participant should:

- 1) Know which echocardiographic views are recommended as part of a comprehensive examination
- 2) Understand image plane nomenclature and anatomic correlation
- 3) Be able to manipulate a TEE probe to acquire appropriate image planes

## **Anatomic Imaging Plane Workshop – Part I**

*Moderators: GS Hartman/NJ Skubas*

The purpose of this workshop is to enhance the participants understanding of the normal cardiac anatomy and TEE scan planes. The audience will be divided into multiple subgroups and distributed to work-stations at which preserved anatomical cardiac sections, corresponding scan planes and recorded TEE video exam segments will be available to facilitate these small group “tutorial” sessions. This framework will afford opportunities for hands-on anatomical section examination, group participation and extensive moderator interactions. The participants will be divided into 9 groups and rotate evenly through all stations across both parts 1 and 2 of the workshop.

Upon completion of this workshop, the participant should:

- 1) Be able to recognize and identify structures in the SCA-20 views
- 2) Understand the different views required for complete imaging of different cardiac structures
- 3) Understand the probe manipulations required to obtain these views

## **Luncheon Series**

*Nuts & Bolts of an Intraoperative Echo Service – CA Troianos*

At the conclusion of this lecture, the participant should have a better understanding of the principles involved in the establishment, operation and quality maintenance of an intraoperative echocardiography service. Topics discussed will include physical requirements for data storage and archival, report generation and billing and collection strategies.

*Certification & Recertification Update – JS Shanewise*

At the conclusion of this lecture, the participant should have a better understanding of:

- 1) The guidelines for training and certification in perioperative TEE including prerequisite medical knowledge and training, echocardiographic knowledge and skills, training components and duration, training environment and supervision, and equivalence requirements for post graduate physicians already in practice
- 2) The process for obtaining certification including case-log, training documentation and lab requirements

## **Basic Principles of TEE**

*Moderator: KP Grichnik*

*Artifacts – LB Heller*

At the conclusion of this lecture, the participant should be able to:

- 1) Understand the sound principles that lead to artifacts
- 2) Explain the causes of the common artifacts
- 3) Recognize the difference between an artifact and a true pathological finding

*Anatomic Pitfalls – KP Grichnik*

At the conclusion of this lecture, the participant should be able to:

- 1) Understand the embryological basis of many common anatomic variants
- 2) Classify the anatomic pitfalls by location in the heart
- 3) Differentiate anatomic pitfalls from a true pathological finding

## **Demonstration of Imaging Principles/Chamber Quantification/ Knobology and Image Optimization Workshops**

*Moderator: SK Shernan(Grichnik)*

*Workshop #1: Basic Hemodynamic Workshop – AC Perrino, Jr.*

At the conclusion of this lecture, the participant should be able to:

- 1) Comprehend the concept of time volume integral (volume time integral)
- 2) Determine stroke volume, cardiac output from TEE measurements
- 3) Understand the modified Bernoulli equation
- 4) Deduce pulmonary artery and other intracardiac pressures from TEE measurements

*Workshop #2: Chamber Quantification and Basic Measurements – S Garwood*

Upon completion of this lecture, the participant should understand:

- 1) The values for normal anatomic dimensions and functional measurements using transesophageal echocardiography
- 2) How to measure and calculate the normal basic anatomic dimensions and functional values using transesophageal echocardiography

*Workshop #3: Knobology and Image Optimization*

*Faculty: LB Heller; KP Grichnik; D Shook*

Upon completion of this workshop, the participant should understand:

- 1) The function of basic knobs on a echocardiography console
- 2) How to use basic knobs and function to optimize image resolution using live imaging

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**Tuesday, February 12, 2008**

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## **Basic Transesophageal Echocardiography I**

*Moderator: Troianos*

*Left Ventricular Global Systolic Function – MJ London*

At the conclusion of this lecture, the participant will be able to:

- 1) Identify normal and abnormal left ventricular systolic function
- 2) Perform qualitative and quantitative assessment of left ventricular systolic function
- 3) Recognize the LV segments and their corresponding coronary distribution
- 4) Perform LV volume assessment

*Right Ventricular Global Systolic Function – JB Mark*

At the conclusion of this lecture, the participant will be able to:

- 1) Identify normal and abnormal right ventricular systolic function
- 2) Develop pertinent TEE views for RV function assessment
- 3) Perform qualitative assessment of right ventricular systolic function
- 4) Understand the concept of ventricular interdependence

*Diastolic Function – S Garwood*

At the conclusion of this lecture, the participant will be able to:

- 1) Understand the importance of diastolic function assessment in the perioperative setting
- 2) Define diastolic physiology by 2D and Doppler echocardiography
- 3) Determine the degree of diastolic dysfunction using echocardiographic modalities

*Case Discussions with Faculty - Troianos, London, Mark, Garwood*

Examples and discussion of LV, RV and diastolic function

*Aortic Regurgitation – CA Troianos*

At the conclusion of this lecture, the participant will:

- 1) Understand the structural anatomy of the normal aortic valve
- 2) Be able to develop TEE views of the aortic valve
- 3) Understand mechanisms of aortic regurgitation
- 4) Know how to perform basic quantitative assessment of aortic regurgitation

*Aortic Stenosis – R Sniecinski*

At the conclusion of this lecture, the participant will:

- 1) Solidify knowledge and understanding of structural anatomy of the normal aortic valve
- 2) Be able to develop TEE views of the aortic valve
- 3) Understand the mechanisms of aortic stenosis
- 4) Recognize the 2D TEE findings of aortic stenosis
- 5) Be able to perform basic quantitative assessment of aortic stenosis

*Aortic Aneurysms and Dissections – D Zvara*

At the conclusion of this lecture, the participant will be able to:

- 1) Describe the echocardiographic characteristics and classification of aortic aneurysms
- 2) Describe the echocardiographic characteristics and classification of aortic dissections
- 3) Compare the diagnostic utility of various imaging modes, including TEE and TTE, in the evaluation of suspected aortic dissection

- 4) Be able to describe the echocardiographic characteristics and prognostic significance of an intramural hematoma or a penetrating ulcer

*Case Discussions with Faculty- Troianos, Sniecinski, Zvara*

Examples and discussion of AS, AI and aortic disease will be presented

### **Regional Wall Motion Workshop**

*Moderators: K Rouine-Rapp*

*Regional Wall Motion Evaluation – Rouine-Rapp*

At the conclusion of this workshop, the participant will be able to describe:

- 1) The global left ventricular contractile function
- 2) The regional left ventricular contractile function
- 3) The global and regional right ventricular contractile function
- 4) The most common misinterpretations of the contractile function based on echocardiography assessment

*Regional Wall Motion Unknown Case Presentations –Rouine-Rapp,Lambert, Fox*

Examples and discussion of regional wall motion and its assessment will be presented

### **Basic Transesophageal Echocardiography II**

*Moderator: LB Heller*

*Mitral Regurgitation – AS Lambert*

Upon completion of this lecture, the participant should understand:

- 1) Structural anatomy of the normal mitral valve
- 2) 2-D echo anatomy of the normal mitral valve
- 3) Anatomical pathology of mitral valve regurgitation
- 4) Mechanisms of mitral regurgitation
- 5) The diagnosis of unknown examples of mitral regurgitation and their quantitative assessment

*Mitral Stenosis – LB Heller*

Upon completion of this lecture, the participant should understand:

- 1) Anatomical pathology of mitral stenosis
- 2) Mechanisms of mitral stenosis
- 3) Basic quantitative assessment of mitral stenosis
- 4) The diagnosis of unknown examples of MS and their quantitative assessment

*Tricuspid Valve & Pulmonic Valve – JB Mark*

Upon completion of this lecture, the participant should understand:

- 1) Structural anatomy of the normal tricuspid and pulmonic valves
- 2) 2-D echo anatomy of the normal tricuspid and pulmonic valves
- 3) Anatomical pathology of tricuspid and pulmonic valvular regurgitation
- 4) Mechanisms of tricuspid valve stenosis and regurgitation
- 5) Qualitative assessment of tricuspid valve stenosis and regurgitation
- 6) The diagnosis of unknown examples of tricuspid valve stenosis or regurgitation and their qualitative assessment

*Cases Discussions with Faculty- Heller, Lambert, Mark*

Examples and discussion of MS, MR and tricuspid valve disease will be presented

*Prosthetic Valves – AT Cheung*

Upon completion of the lecture, the participant should be able to:

- 1) Identify the different types of prosthetic valves and their echocardiographic “signature”
- 2) Describe the advantages and indications of each of the prosthetic valve options
- 3) Recognize the echocardiographic criteria establishing abnormal prosthetic valve function

*Basic Congenital Heart Disease – K Rouine-Rapp*

Upon completion of this lecture, the participant should understand:

- 1) Normal embryological development of the heart
  - 2) The echocardiographic features of commonly encountered adult congenital heart lesions
  - 3) Pitfalls in differentiating congenital heart lesions from normal variants
- Lesions to be covered include: ASD, VSD, PFO, PLSVC

**Ultrasound for Regional Anesthesia and Vascular Access Workshop**

*Moderator: Grichnik & Spence*

Group I – Vascular Access (mannequins/phantom and live demonstrations)

At the conclusion of this lecture, the participant will:

- 1) Understand the rationale for the use of ultrasound guidance during central venous catheterization
- 2) Be able to describe the techniques used and the currently available ultrasound equipment for ultrasound guided vascular cannulation
- 3) Have an opportunity to practice hand’s on ultrasound for vascular access

Group II –Regional Access

At the conclusion of this lecture, the participant will:

- 1) Understand the rationale for the use of ultrasound guidance during regional anesthesia
- 2) Be able to describe the techniques used and the currently available ultrasound equipment for regional anesthesia

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**Wednesday, February 13, 2008**

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**Cardiac Anatomy Wet Lab**

*Moderator: GS Hartman/D Shook*

*Overview of Cardiac Anatomy – D Shook*

At the conclusion of this lecture, the participant should understand:

- 1) Gross external anatomy of the heart
- 2) External landmarks for cardiac anatomy
- 3) Nomenclature and location of epicardial vessels
- 4) Anatomic features and nomenclature of individual chambers
- 5) Location of developmental anatomic remnants
- 6) Location, orientation and underlying structure of different cardiac valves
- 7) Anatomic relationship of the coronary circulation and conduction system to the cardiac valve structure
- 8) Anatomic basis of surgical procedures and complications involving cardiac valves

*Wet Lab Heart Dissection – Faculty: Smedira, Shook, Bollen, Shernan, Glas, Grichnik, Troianos*

This is a hands-on dissection lab in which participants have the opportunity to watch a prosection of the heart and then perform a similar dissection on their own. Correlations of cardiac anatomy, valvular three dimensional orientation, external and internal anatomical landmarks and their TEE scan planes correlates will be illustrated.

*TEE Correlations of Cardiac Anatomy – D Shook*

Upon completion of this lecture, the participant should understand the TEE correlates of the anatomical structures discussed in the previous lecture and wet-lab demonstrations, including:

- 1) Correlation of anatomical to echocardiographic sections
- 2) 3-dimensional aspects of the heart and great vessels
- 3) Correlation of probe scan planes to anatomical windows into the heart

**Non-cardiac Surgical Applications of Echocardiography**

*Moderator: KE Glas*

*Non-operating Room Applications of TEE – JG Ramsay*

At the conclusion of this lecture, the participant will be able to describe:

- 1) The role of echocardiography (TEE or TTE) in the evaluation of chest pain in the ER/trauma
- 2) The role of echocardiography (TEE or TTE) in the evaluation of hemodynamic instability in the ER/trauma
- 3) Be able to describe the role of echocardiography (TEE or TTE) in the ICU in the evaluation of hemodynamic instability or hypoxemia
- 4) Be able to describe the role of echocardiography (TEE or TTE) in the ICU in the evaluation of suspected endocarditis

**Ultrasonographic Examination of the Aorta**

*Moderator: KE Glas*

*Aortic Atheromatous Disease and Neurocognitive Outcome – I Kronzon*

At the conclusion of this lecture, the participant will:

- 1) Understand the risk of aortic atheromatous disease
- 2) Understand techniques needed to assess aortic atheromatous with Echo
- 3) Know how to grade lesions

*Epicardial and Epi-aortic Ultrasound – KE Glas*

At the conclusion of this lecture, the participant will understand:

- 1) The indications for epicardial imaging
- 2) The different epicardial imaging planes
- 3) The available windows for Doppler interrogation provided by epicardial imaging
- 4) How epicardial echocardiography is utilized in guiding the decision making process in cardiovascular surgery

## **Summary and Review of Basic Course**

*Moderator: GS Hartman/Shernan*

*You're the Intraoperative Consultant: Basic - Faculty: Hartman, Shernan, Grichnik, Troianos*

At the conclusion of this lecture, the participant will:

- 1) Understand the role of echocardiography in evaluating basic pathology
- 2) Understand techniques needed to assess for ventricular and valvular dysfunction
- 3) Know how to perform, analyze and report and echocardiography examination

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**Thursday, February 14, 2008**  
**Advanced**

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## **Advanced Echocardiography I**

### **Ventricular Function**

*Moderator: Shernan SK (Troianos)*

*Advanced Challenging Cases: K Grichnik, C Troianos*

At the conclusion of this lecture, the participant will:

- 1) Understand the general scope of advanced cases they should be able to understand and diagnose. Cases will be presented along with representative videos and sample questions. On Saturday morning, these cases will be reviewed in detail.

*Advanced Systolic Function – AT Cheung*

At the conclusion of this lecture, the participant will:

- 1) Be prepared to apply echocardiography for assessment of LV systolic function
- 2) Be able to recognize the advantages and disadvantages of various techniques

*Advanced Diastolic Function: “Beyond the E- and A-Wave” – M Swaminathan*

At the conclusion of this lecture, the participant will:

- 1) Be able to differentiate systolic function from diastolic function as a basis for pathophysiology
- 2) Be able to assess diastolic dysfunction with various echocardiographic techniques
- 3) Recognize the advantages and limitations of each technique

*Tissue Doppler/Stress/Strain – NJ Skubas*

At the conclusion of this lecture, the participant will:

- 1) Understand techniques for acquiring Doppler tissue imaging, strain, and strain rate
- 2) Be able to describe applications for Doppler tissue imaging, strain, and strain rate in the evaluation of myocardial performance

*3D and 4D Echocardiography – D Shook*

At the conclusion of this lecture, the participant will be able to:

- 1) Describe the techniques for acquiring and reconstructing 3D echocardiographic images
- 2) Describe the techniques for acquiring Real Time 3D echocardiographic images
- 3) Identify perioperative applications of 3D echocardiography

*Case Discussions with Faculty – Cheung, Swaminathan, Skubas, Shook, Shernan*

Examples and discussion advanced systolic, diastolic function, stress/strain and 3D echo will be presented

## **Echocardiography for Heart Failure and Cardiomyopathies**

*Moderator: AD Maslow*

*Echocardiographic Evaluation of Cardiomyopathies – AD Maslow*

At the conclusion of this lecture, the participant will be able to:

- 1) Identify subcategories of cardiomyopathies
- 2) Apply echo for quantitative analysis of LV function in patients with cardiomyopathies

*Pericardial Disease – EG Avery*

At the conclusion of this lecture, the participant will be able to:

- 1) Identify subcategories of pericardial disease
- 2) Apply Echo for quantitative analysis of LV function in patients with pericardial disease

*Intraoperative Echo for Ventricular Assist Devices and Heart Transplantation - TM Burch*

At the conclusion of this lecture, the participant will understand:

- 1) The risk of VAD
- 2) Critical information required to manage the risk of VAD
- 3) How Echo can help manage the risk of VAD

## **Advanced Echocardiography II**

### **Aortic Valve – Advanced**

*Moderator: BA Bollen*

*Timing of Surgery/Intervention in Asymptomatic Aortic Valve Disease - AE Weyman*

At the conclusion of this lecture, the participant will be able to:

- 1) Describe the important factors in evaluating aortic valve disease and the timing of surgical intervention
- 2) Identify when intervention is necessary in patients with asymptomatic aortic valve disease

*Patient Prosthetic Mismatch and Pressure Recovery after Aortic Valve Replacement– I Kronzon*

At the conclusion of this case discussion, the participants should:

- 1) Have a better understanding of the phenomenon and significance of pressure recovery
- 2) Have a better understanding of patient prosthetic mismatch
- 3) Have a better understanding of the different perspectives in the perioperative treatment of and decision making in patients with small aortic root dimensions

*Aortic Valve Replacement or Repair – NG Smedira*

At the conclusion of this lecture, the participant will be able to:

- 1) Explain how echocardiography can be used to evaluate normal aortic valve anatomy
- 2) Explain how echocardiography can be used to evaluate aortic valve pathology and function
- 3) Describe the impact of echocardiography on surgical decision making during aortic valve procedures
- 4) Identify the surgical options available in patients with aortic valve disease
- 5) Understand the technical issues, which must be addressed to insure success of each procedure
- 6) Compare the advantages and disadvantages of each of these procedures
- 7) Describe the potential complications of each of these surgical procedures

*Case Discussions with Faculty - Bollen, Weyman, Kronzon, Smedira*

At the conclusion of this case discussion, the participants should:

- 1) Have a better understanding of the roles that cardiologists, surgeons and anesthesiologists play in the diagnosis and surgical treatment of aortic valve disease
- 2) Have been introduced to the specific technical and intellectual expertise that each discipline brings to the care of patients with aortic valve disease
- 3) Have a better understanding of the different perspectives in the perioperative treatment of patients with advanced aortic valve disease

**Advanced Hemodynamic Workshop**

*Moderator: Cheung, Maslow*

*Review of Advanced Hemodynamic Principles and Quantitative Doppler – A Maslow*

Upon completion of this lecture, the participant should understand:

- 1) The physics and formulae used in Quantitative Doppler Echocardiography
- 2) How Quantitative Doppler Echocardiography and knowledge of Hemodynamic Principles can be used
- 3) How to calculate intracardiac velocity, flow, chamber pressures and valve areas
- 4) The limitations of Quantitative Doppler Echocardiography

*Advanced Hemodynamic Case Discussions – Cheung, Shernan; Konstadt, Koch, Maslow*

Upon completion of this lecture, the participant should understand:

- 1) How to obtain estimates of intracardiac velocity, flow, chamber pressures and valve areas using a Case Discussion format
- 2) The clinical applications of measurements and calculations obtained by Quantitative Doppler Echocardiographic techniques

**LECTURE OBJECTIVES**  
**Friday, February 15, 2008**

**Advanced Mitral Valve**

*Moderator: BA Bollen*

*Your Patient is Scheduled for Mitral Valve Repair but Presents with Only 2+ Regurgitation by Intraoperative TEE: What Now?- S. Konstadt*

At the end of this lecture the participant will understand:

- 1) Physiology of mitral regurgitation and anesthesia
- 2) Pharmacologic maneuvers to manipulate mitral regurgitation
- 3) Decision-making in mitral valve surgery

*Ischemic Mitral Regurgitation - S Aronson*

At the conclusion of this lecture, the participant will understand:

- 1) Anatomy and function of the mitral valve apparatus
- 2) The definition of ischemic mitral regurgitation
- 3) Changes of the MV apparatus associated with chronic myocardial ischemia
- 4) Long-term strategies in the surgical management of ischemic MR

*Surgical Repair of the Mitral Valve - D Adams*

At the conclusion of this lecture, the participant will understand:

- 1) Surgical anatomy of the mitral valve apparatus
- 2) The surgeon's systematic examination of the mitral valve apparatus
- 3) Correlation of surgical inspection with the intraoperative echo examination
- 4) Surgical considerations and options in MV repair
- 5) Causes of unsuccessful MV repair

*Lecture: Case Discussions with Faculty: Bollen, Konstadt, Aronson, Adams*

At the conclusion of this case discussion, the participants should:

- 1) Have a better understanding of the roles that cardiologists, surgeons and anesthesiologists play in the diagnosis and surgical treatment of mitral valve disease
- 2) Have been introduced to the specific technical and intellectual expertise that each discipline brings to the care of patients with mitral valve disease
- 3) Have a better understanding of the different perspectives in the perioperative treatment of patients with advanced mitral valve disease

## **Role of Echocardiography in Perioperative Clinical Decision-making: Part I**

*Moderator: RM Savage*

### *Role of Echocardiography in Percutaneous Approaches to Valve Dysfunction - RM Savage*

At the conclusion of this lecture, the participant will understand:

- 1) Current practices related to valve procedures in the catheterization lab
- 2) Echocardiographic goals in this patient population
- 3) Indications and contraindications for percutaneous procedures

### *Mitral Valve Dysfunction after Mitral Valve Repair - S Shernan*

At the conclusion of this lecture, the participant will understand:

- 1) Mechanisms of post-repair MS and MR
- 2) Efficient MS/MR severity assessment methods in post-CPB MV repair
- 3) Surgical considerations in re-repair of the mitral valve
- 4) Long term outcomes of different MV repair techniques

### **Luncheon Series: Future of Cardiac Surgery – D Adams**

At the conclusion of this lecture, the participant will understand:

- 1) Demographic trends impacting the future of cardiovascular surgery
- 2) Evolving technologies that will impact the management of cardiovascular disease
- 3) Complications of newer technologies and their perioperative management
- 4) Future of training in the cardiovascular disciplines

## **Role of Echocardiography in Perioperative Clinical Decision-making: Part II**

*Moderator: RM Savage*

### *How to Use Echocardiography to Help Wean from Bypass - T. Burch*

At the conclusion of this lecture, the participant will understand:

- 1) Anesthetic-hemodynamic considerations in successful weaning from CPB
- 2) Etiologies of myocardial dysfunction during separation from CPB
- 3) The use of intraoperative echo in guiding the separation from CPB
- 4) The therapeutic options available in difficult weaning from CPB and their indications

### *Unanticipated Ascending Aortic Dilatation: How Big is Too Big? - AT Cheung*

At the conclusion of this lecture, the participant will understand:

- 1) The integrated anatomy of the aortic root complex
- 2) Etiologies of ascending root dilatation
- 3) Surgical considerations in unanticipated ascending aortic dilatation
- 4) Intraoperative echo in directing the management of ascending aortic dilatation

### *Echocardiographic Assessment of Myocardial Viability - M Swaminathan*

At the conclusion of this lecture, the participant will:

- 1) Be able to illustrate the need to identify viable myocardium for acute care
- 2) Be able to describe the methodologies available to assess viability
- 3) Be able to evaluate the functionability of echocardiography for evaluating viability perioperatively

*Echocardiography for Adult Congenital Heart Disease – I Russell*

At the conclusion of this lecture, the participant will understand:

- 1) Understand the common adult congenital pathologies presenting for primary or repeat cardiac surgery
- 2) Understand management of congenital heart disease patients for non-cardiac surgery when they are partially corrected, palliated, or awaiting correction
- 3) Understand echocardiographic anatomy of common congenital disease processes

*Stump the Panel: Unusual Cases from the Faculty: Savage, Burch, Cheung, Swaminathan, Russell*

At the conclusion of this panel, the participant will:

- 1) Gain knowledge of unusual echocardiographic diagnoses
- 2) Develop a process for evaluating echocardiograms when the diagnosis is difficult

**“Test Yourself”**

*Moderator: Zvara*

At the conclusion of this workshop, the participant will:

- 1) Have been assessed on a broad range of echocardiographic knowledge in a simulated testing environment
- 2) Be able to determine their areas of relative strength and weakness in preparation for the standardized echocardiography competency examinations
- 3) Be able to place their relative testing knowledge against other participants taking the mock examination
- 4) Devise test study strategies, which may help guide preparation for standardized echocardiography examinations

**LECTURE OBJECTIVES**  
**Saturday, February 16, 2008**

**Moderators: Shernan and Hartman**

You're the Intraoperative Echocardiography Consultant:

Upon completion of this session, the participant will have a better understanding of:

- 1) How to be a perioperative echocardiography consultant
- 2) The utility of echocardiography for perioperative decision-making through the use of interactive case discussions
- 3) Unusual cases and the application of perioperative ultrasound to clinical care of patients with cardiovascular disease