



DEPARTMENT OF ANAESTHESIA
& PERIOPERATIVE MEDICINE
UNIVERSITY OF CAPE TOWN



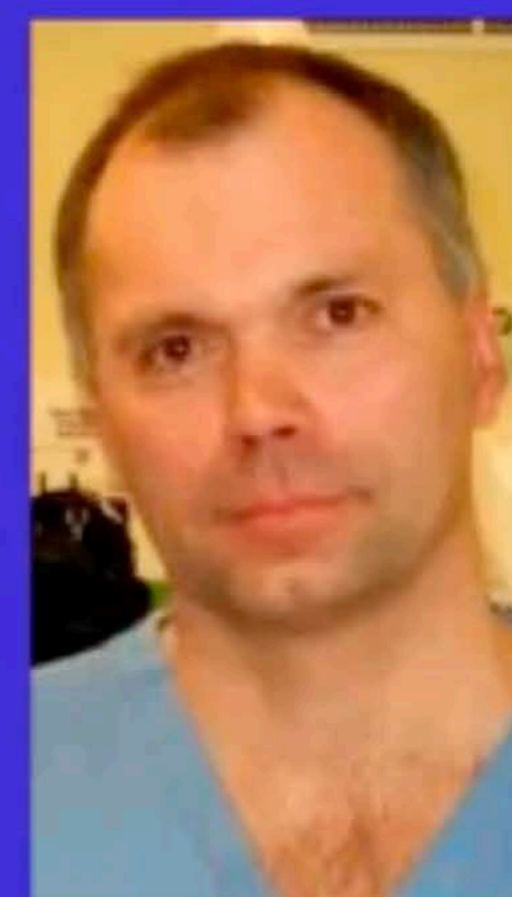
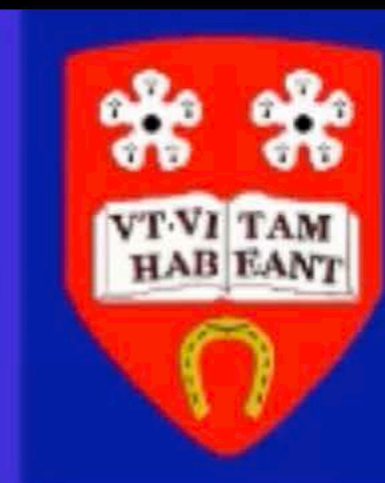
TOE – Teach and Learn



Justiaan Swanevelder, Dept of Anaesthesia and Perioperative Medicine
Groote Schuur and Red Cross War Memorial Children's Hospitals
University of Cape Town, South Africa



Acknowledgements



Justiaan Swanevelder (Guest)

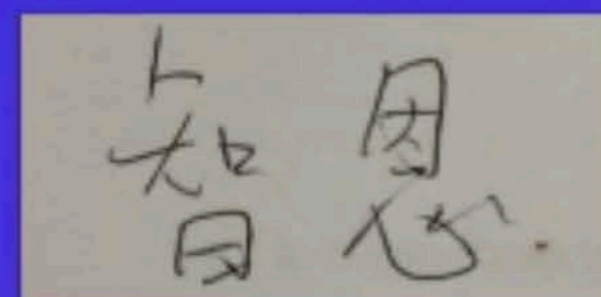
University Hospitals of Leicester **NHS**

NHS Trust



“An institution that prides itself in its history will never be lost, because it has got a reference point for the presence and an anchor for the future.”

**Derek “Tze-en” Chin
St George’s Hospital 2014**

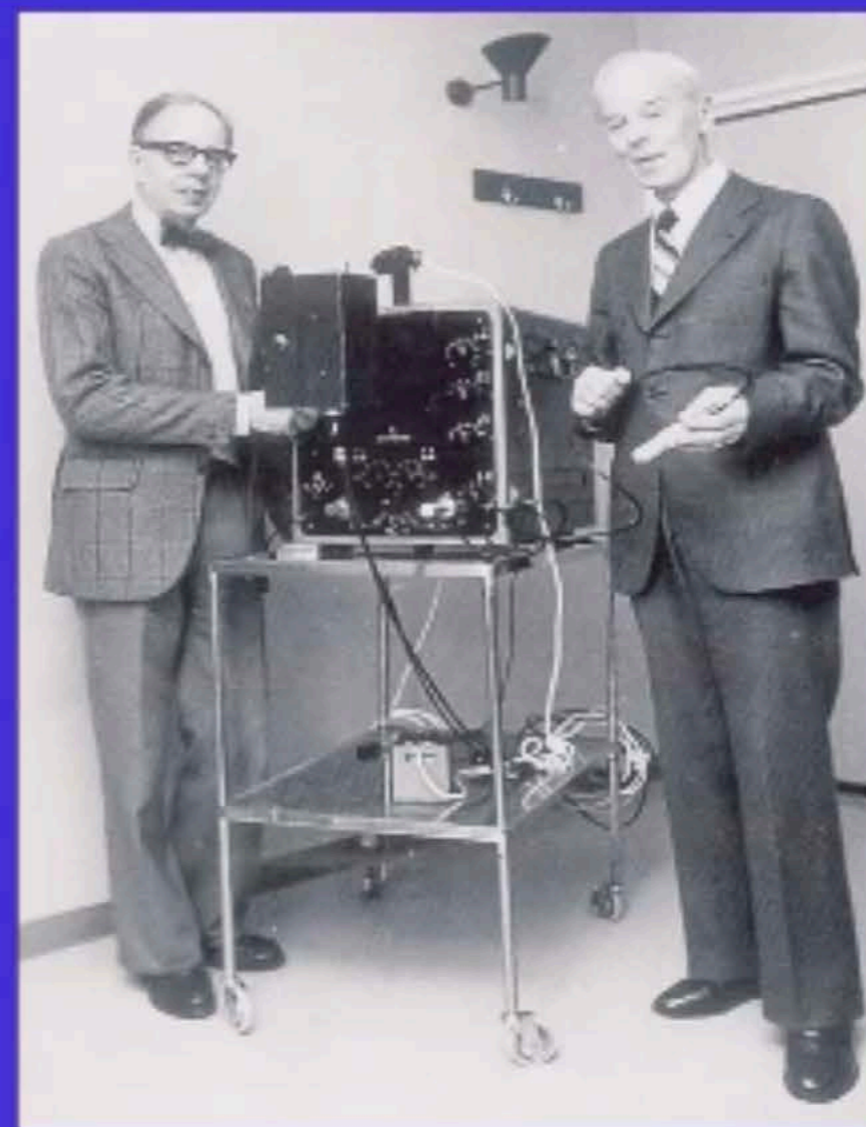


TOE – teach and learn

- Where did we start?
- What do we know?
- How should we learn?
- How should we teach?
- What is the role of examination and accreditation?
- Can innovation improve how we do things?

History

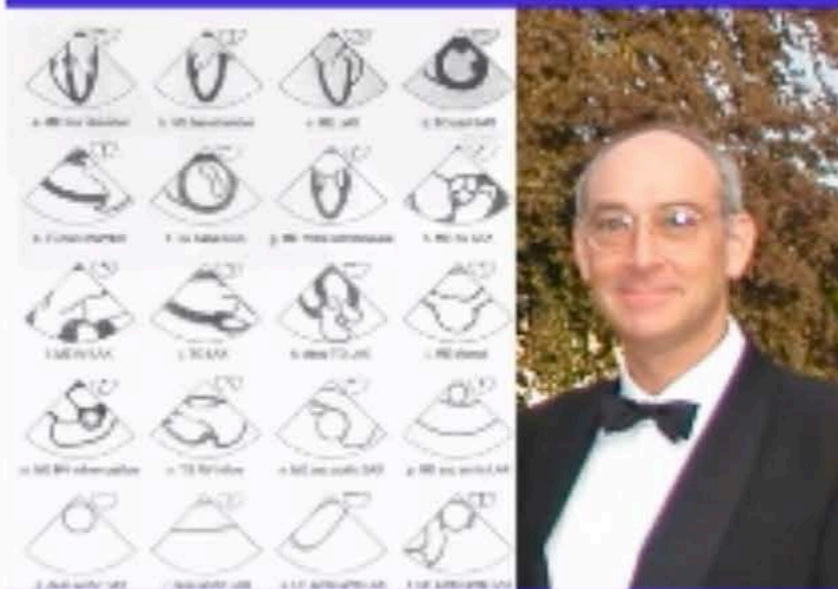
- Frazin et al. Circulation 1976;54:102
- Matsumoto et al.
Am J Cardiol 1980;46:95-105
- Hillel et al.
J Cardiothorac Anesth 1988;2:803
- now standard of care
 - valve repair, CHD, extensive use
 - ACTA/BSE Accreditation
 - EACTA/EAE Accreditation
 - NBE Accreditation



ASE/SCA Guidelines for Performing a
Comprehensive Intraoperative Multiplane
Transesophageal Echocardiography Examination:
Recommendations of
the American Society of Echocardiography
Council for Intraoperative Echocardiography and
the Society of Cardiovascular Anesthesiologists
Task Force for Certification in Perioperative
Transesophageal Echocardiography

J Am Soc Echocardiogr 1999;12:884-900

Jack S. Shanewise, MD, Albert T. Cheung, MD, Solomon Aronson, MD, William J. Stewart, MD,
Richard L. Weiss, MD, Jonathan B. Mark, MD, Robert M. Savage, MD, Pamela Sears-Rogan, MD,
Joseph P. Mathew, MD, Miguel A. Quiñones, MD, Michael K. Cahalan, MD, and Joseph S. Savino, MD,



ASE GUIDELINES AND STANDARDS

J Am Soc Echocardiogr 2013;26:921-64

Guidelines for Performing a Comprehensive
Transesophageal Echocardiographic Examination:
Recommendations from the American Society of
Echocardiography and the Society of Cardiovascular
Anesthesiologists

Rebecca T. Hahn, MD, FASE, Chair, Theodore Abraham, MD, FASE, Mark S. Adams, RDCS, FASE,
Charles J. Bruce, MD, FASE, Kathryn E. Glas, MD, MBA, FASE, Roberto M. Lang, MD, FASE,
Scott T. Reeves, MD, MBA, FASE, Jack S. Shanewise, MD, FASE, Samuel C. Siu, MD, FASE,
William Stewart, MD, FASE, and Michael H. Picard, MD, FASE, *New York, New York; Baltimore, Maryland;*

Practice Guidelines for Perioperative Transesophageal Echocardiography *Anesthesiology* 2010; 112:1-1

*An Updated Report by the American Society of Anesthesiologists and the Society of Cardiovascular Anesthesiologists Task Force on Transesophageal Echocardiography**

“for adult patients without contraindications, TEE should be used in all open heart (e.g. valvular procedures) and all thoracic aortic surgical procedures, and should be considered in CABG surgeries as well”

Practice Guidelines for Perioperative Transesophageal Echocardiography

Anesthesiology 2010; 112:1084-96

*An Updated Report by the American Society of Anesthesiologists and the Society of Cardiovascular Anesthesiologists Task Force on Transesophageal Echocardiography**

Contraindications for the Use of TEE

Both the consultants and ASA members are equivocal with regard to whether there are no absolute contraindications to TEE other than previous esophagectomy or esophagogastrectomy. Those consultants and ASA members who do not agree

Recommendations for transoesophageal echocardiography: update 2010

Flachskampf FA, et al. Eur J Echocardiogr 2010;11:557–76

The European Association of Echocardiography; endorsed by the Echo Committee of the European Association of Cardiothoracic Anaesthesiologists

“.....to confirm or further define the preoperative diagnosis, exclude any new deterioration or unsuspected pathology, facilitate the intra-operative management of the patient, including where necessary to aid in surgical planning, and to evaluate the results of surgery and provide information for the postoperative care”

“we concur that TOE is reasonable for use in all adult patients who are undergoing either cardiac surgery or thoracic aortic surgical procedures under general anaesthesia.”

Original Article

Complications related to peri-operative transoesophageal echocardiography – a one-year prospective national audit by the Association of Cardiothoracic Anaesthesia and Critical Care

Anaesthesia 2019

G. Ramalingam,¹ S.-W. Choi,² S. Agarwal,³ G. Kunst,⁴ R. Gill,⁵ S. N. Fletcher⁶ and A. A. Klein,¹ on behalf of the Association of Cardiothoracic Anaesthesia and Critical Care*

Anaesthesia

Peri-operative medicine, critical care and pain



Association
of Anaesthetists

ACTACC national audit 2017 in 28 centres
22,314 patients over 12 months

Major complications 0.08% (1/1300)
Death directly related to TOE 0.03% (1/3000)



Measurements and normal values

Recommendations for Chamber Quantification: A Report from the American Society of Echocardiography's Guidelines and Standards Committee and the Chamber Quantification Writing Group, Developed in Conjunction with the European Association of Echocardiography, a Branch of the European Society of Cardiology

Members of the Chamber Quantification Writing Group are: Roberto M. Lang, MD, FASE, Michelle Bierig, MPH, RDCS, FASE, Richard B. Devereux, MD, Frank A. Flachskampf, MD, Elyse Foster, MD, Patricia A. Pellikka, MD, Michael H. Picard, MD, Mary J. Roman, MD, James Seward, MD, Jack S. Shanewise, MD, FASE, Scott D. Solomon, MD, Kirk T. Spencer, MD, FASE, Martin St John Sutton, MD, FASE, and William J. Stewart, MD

J Am Soc Echocardiogr 2005;18:1440-1463

Information:

Course supervisor:

Justiaan Swanevelder

Course co-ordinator:

Adriaan Myburgh

e-mail: adriaan_myburgh@yahoo.com

Dates:

25th -29th November 2013 (full)

10th-14th February 2014

Venue:

Groote Schuur Hospital
D23 Anaesthetic Department
Cape Town

Contact details:

Tel: + 27 (0) 21 404 5004

Fax: + 27 (0) 21 4066589

Cost:

Registrars: R2500

Cardiothoracic Anaesthetic Society of South Africa

(CASSA) members: R4000

Specialists (non-CASSA members): R 5000

Banking details:

FNB Mowbray

Branch number: 200309

Account name: UCT TEE Training

Account number: 62396957270

Please use your surname as reference when doing an internet transfer.

Notes:

- Lunch will be provided. Please indicate any special meal requirements.
- Textbooks on the topic recommended for after hours study.
- A reading list will be provided for participants in advance.
- Maximum of eight candidates per course.
- Candidates will be divided into groups depending on prior knowledge and experience.
- Faculty: Justiaan Swanevelder, Groote Schuur Department of Anaesthesia, and International and National visiting leaders in the field of Echocardiography.
- CPD accredited.

Endorsed by The Cardiothoracic Anaesthetic Society of South Africa



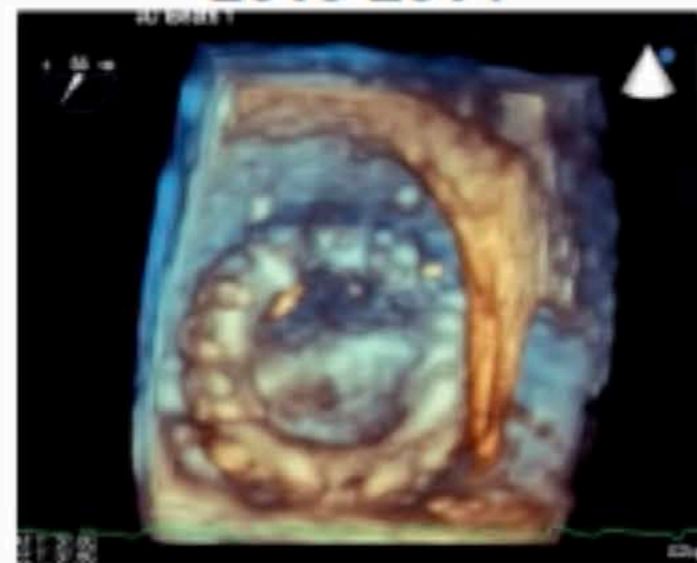
Sponsors:

PHILIPS

imagination at work



Groote Schuur Hospital Hands-on Peri-operative Echocardiography Course 2013-2014



University of Cape Town
Department of Anaesthesia

PROGRAMME: GROOTE SCHUUR HOSPITAL PERI-OPERATIVE ECHOCARDIOGRAPHY COURSE

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
LECTURE: 07:30	Welcome Principles and physics of Echo and Doppler Pitfalls and artifacts Basic views and planes	Haemodynamics	The Echo machine: knobology and probe care	Tricuspid valve, Pulmonic Valve and the RV	Anatomical Wet Lab: dissection of cardiac specimens Congenital heart disease (ASD, VSD, PFO)
OPERATING THEATRES Morning session Lunch: 12:00	Hands-on in theatre and ICU	Hands-on in theatres and ICU	Hands-on in theatre and ICU	Hands-on in theatre and ICU	Hands-on in theatre and ICU
OPERATING THEATRES Afternoon session LECTURE	Hands-on in theatre and ICU Ventricular systolic and diastolic function/ dysfunction	Hands-on in theatre and ICU Mitral valve and MV repair	Hands-on in theatre and ICU Aortic valve	Hands-on in theatre and ICU Aorta Intracardiac tumours and masses	Delegate knowledge assessment and practical exam
DISCUSSION 17:00-18:00	Comparative anatomy Wine and Cheese	Questions and answers	Questions and answers	Questions and answers	
				Course dinner 18h30	

Goals:

- Learning the theory of echocardiography, its uses and pitfalls.
- Applying learnt knowledge under supervision in a real clinical environment.
- Emphasis on trans-oesophageal echocardiography.
- Learning the basics of trans-thoracic echocardiography with an emphasis on focused assessment.

Leicester TOE course Evaluation Form (18 - 22 Nov 2013)

Please complete this evaluation form and hand it in as you leave. Thanks for your assistance.

Day	Excellent	Good	Acceptable	Poor
Monday	5	1		
Tuesday	5	1		
Wednesday	5	1		
Thursday	6			
Friday	5	1		

	Organisation and Objectives	Excellent	Good	Acceptable	Poor
1	General Administration Prior to the Course	4	2		
2	Organisation During the Course	5	1		
3	Venue	5	1		
4	Overall Quality of the Course	5	1		

Comments

Very friendly in all the theatres, gives you lot of opportunities to scan
Overwhelmingly excellent impression overall- friendly staff and teachers; top-notch skills and v highly qualified instructors.
This is an excellent hands-on experience course with immense exposure to variety of cases.
Excellent course, valuable to see the interaction between anaesthetists and surgeons.

What was it about the course that particularly attracted you?

Very interactive
Lots of hands-on experience
Hands on experience and prof Swane teaching in the course
Advertised as an unparalleled hands-on introduction to TOE
The possibility to do myself with a supervisor
Plenty of hands-on experience, has both ICU and theatre exposure.

Is there anything else that you would have liked to see included, or any topic you would have liked to spend more time on?

We had enough time to discuss all important topics in detail.
Would have been nice if had more TOE on ICU pts.
If possible- more practical time spent interrogating 'Normal' hearts; perhaps TOE on non-cardiac patients??
If possible -I know it is complex- but getting hands-on SIM man would be very appreciated.

Why a complete examination?

- Increased practice when learning
- Increased exposure to normal / abnormal anatomy
- Provides baseline for later comparison
- Often unexpected, important findings



The goal is not to obtain all views in all patients



The Adequacy of Basic Intraoperative Transesophageal Echocardiography Performed by Experienced Anesthesiologists

Anesth Analg 2001;92:1103–10

Joseph P. Miller, MD*, A.-Stephane Lambert, MD†, William A. Shapiro, MD‡, Isobel A. Russell, MD‡, Nelson B. Schiller, MD§, and Michael K. Cahalan, MD‡

Unconsciously incompetent
= dangerous!

Consciously incompetent
= scared!

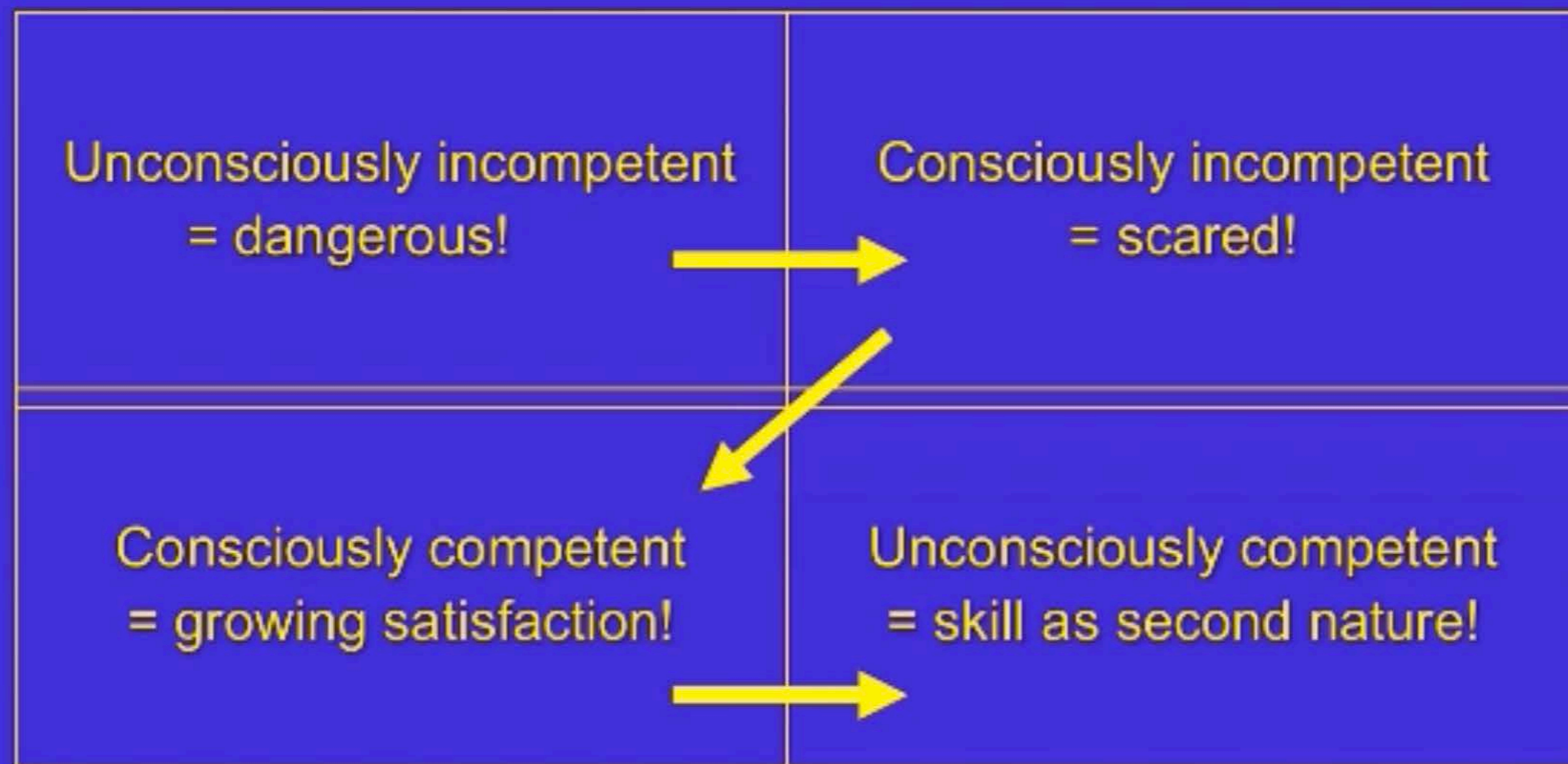
Consciously competent
= growing satisfaction!

Unconsciously competent
= skill as second nature!

The Adequacy of Basic Intraoperative Transesophageal Echocardiography Performed by Experienced Anesthesiologists

Anesth Analg 2001;92:1103–10

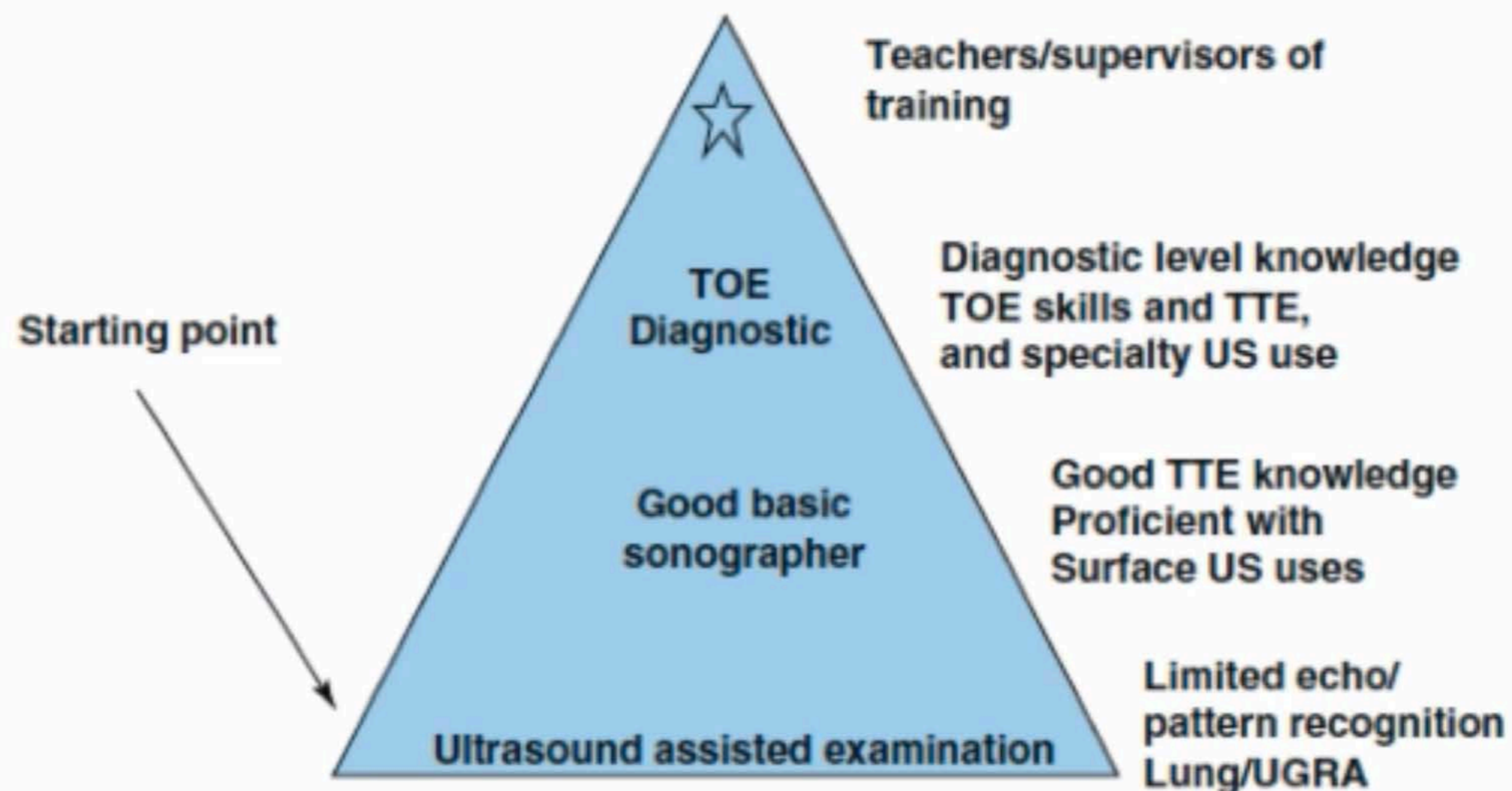
Joseph P. Miller, MD*, A.-Stephane Lambert, MD†, William A. Shapiro, MD‡, Isobel A. Russell, MD‡, Nelson B. Schiller, MD§, and Michael K. Cahalan, MD‡



Chapter 4 Transthoracic Echocardiography in the Preoperative Clinic

David J. Canty and Colin F. Royse

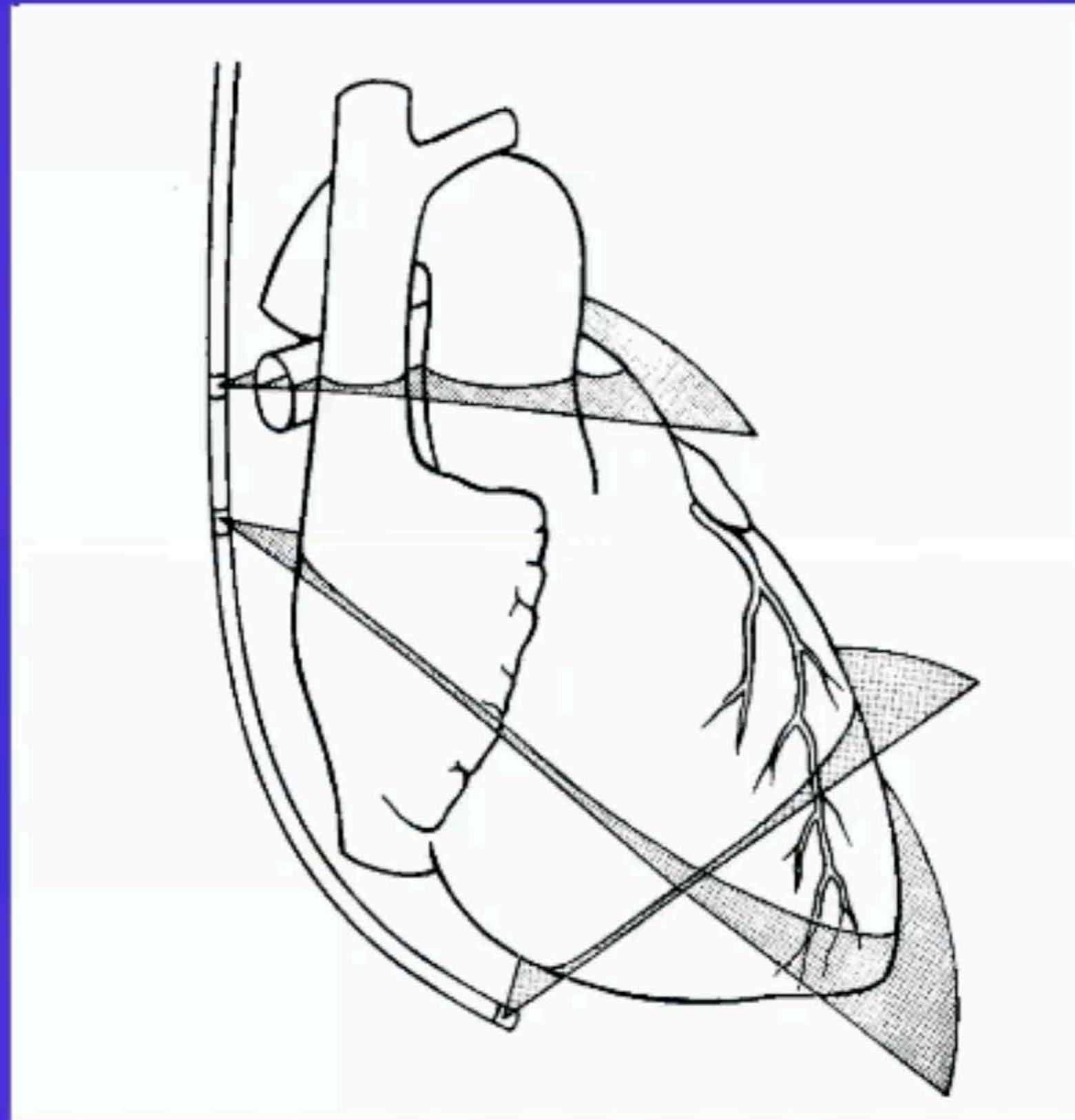
The expertise pyramid



Upper oesophageal

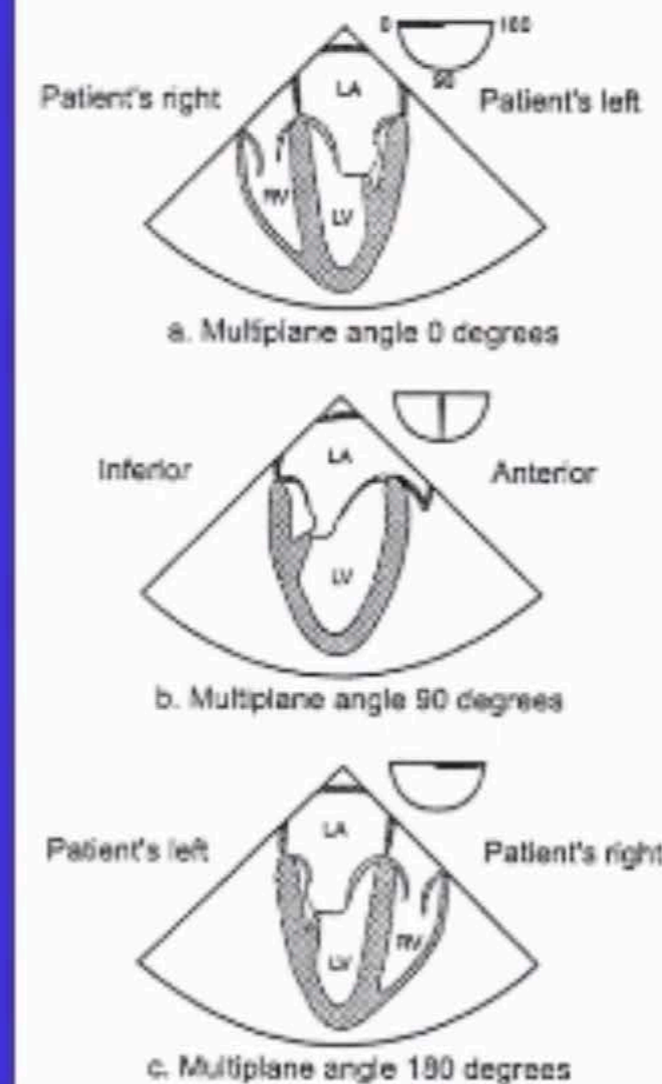
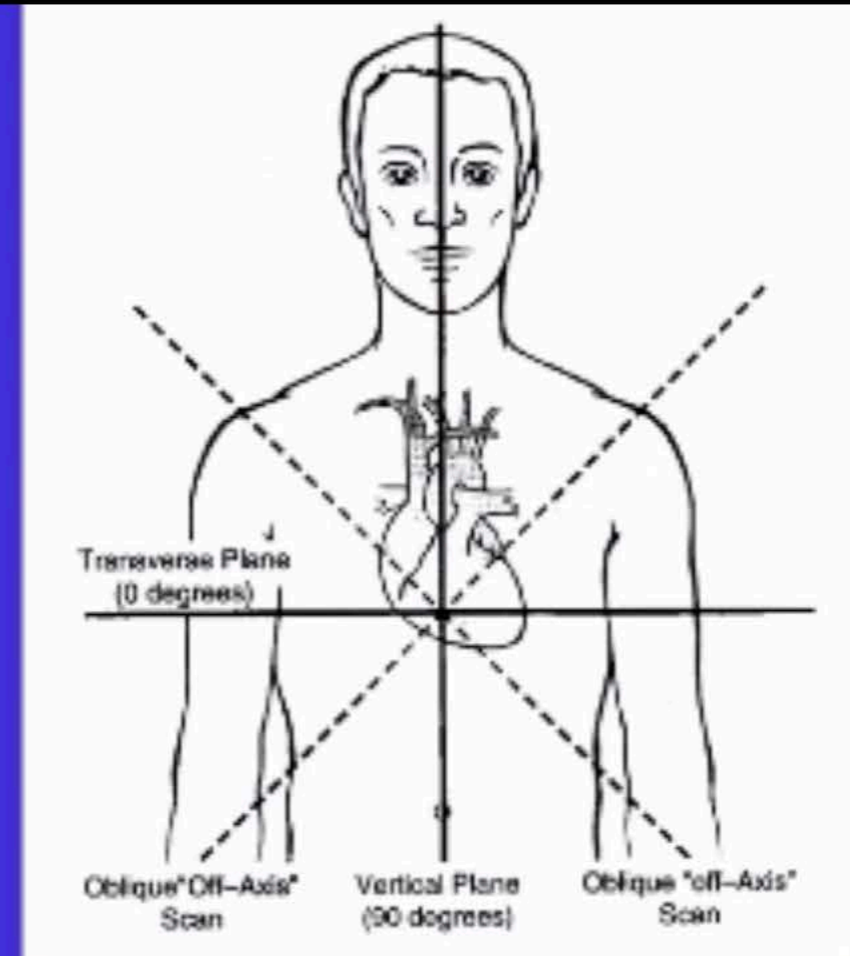
Mid oesophageal

Transgastric

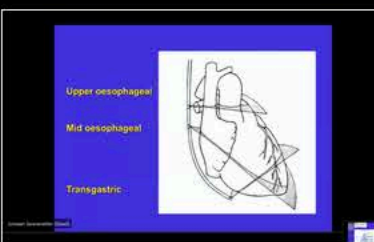


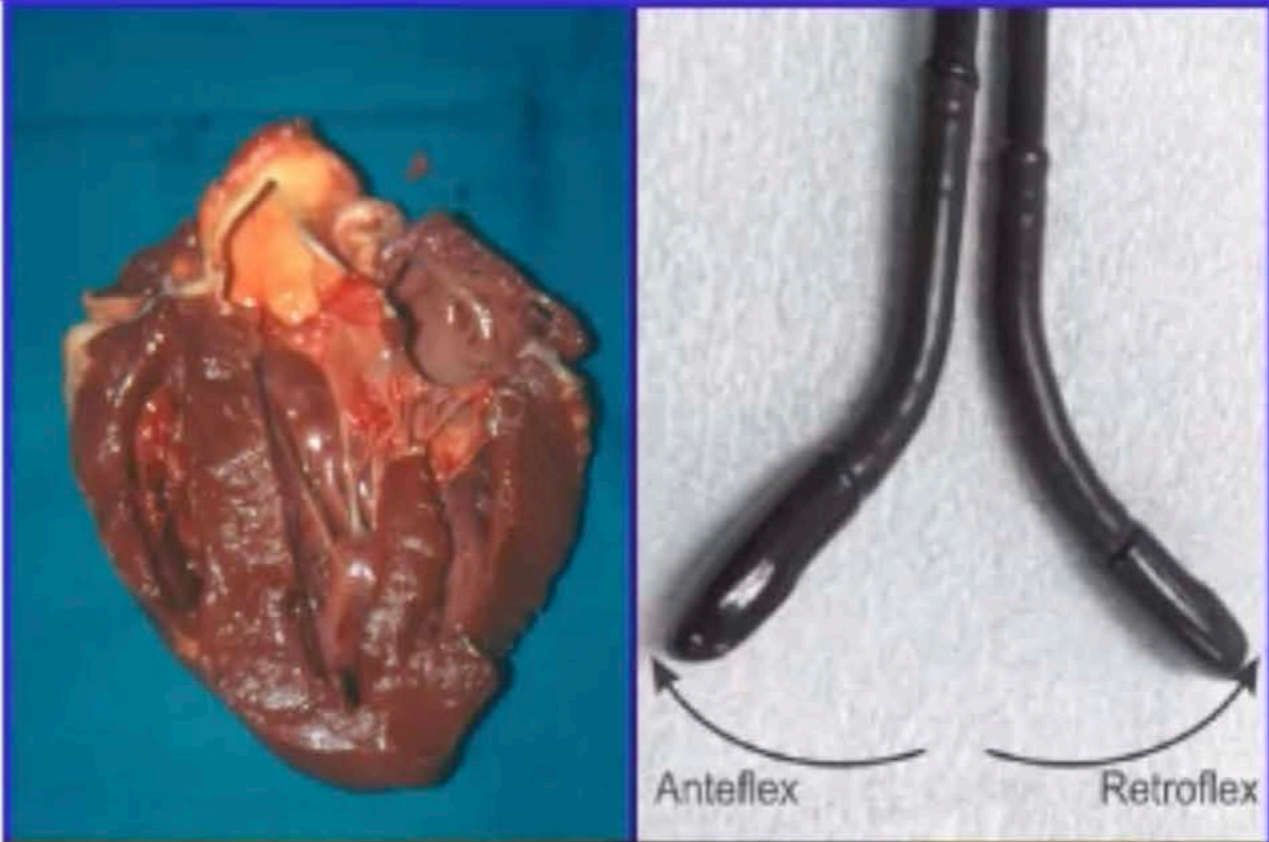
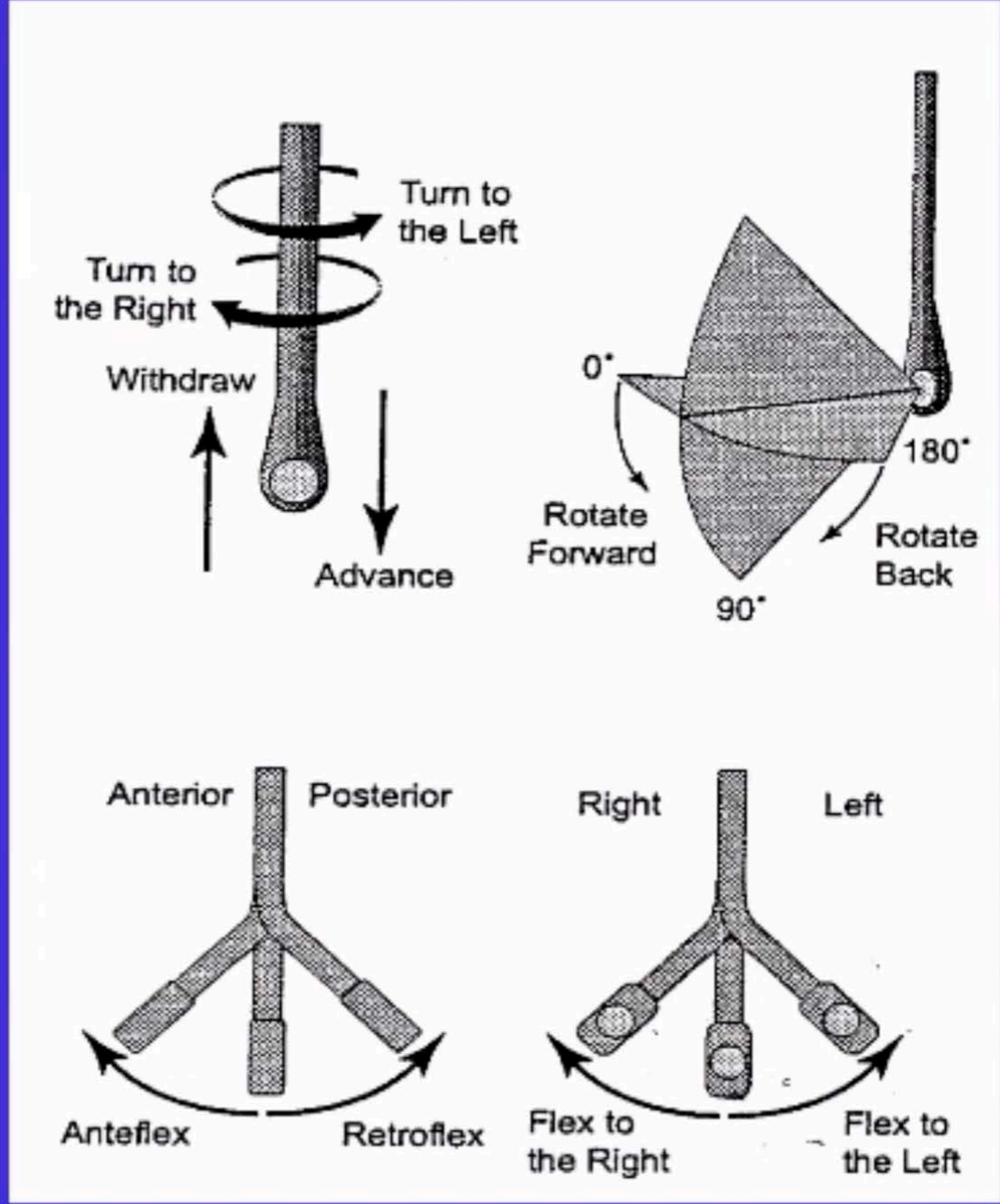
Planes

- Horizontal plane (0 degrees)
probe depth, flexion-extension
- Vertical plane (90 degrees)
probe depth, clockwise
counter-clockwise
- Multiplane “off-axis” imaging
(0-180 degrees)



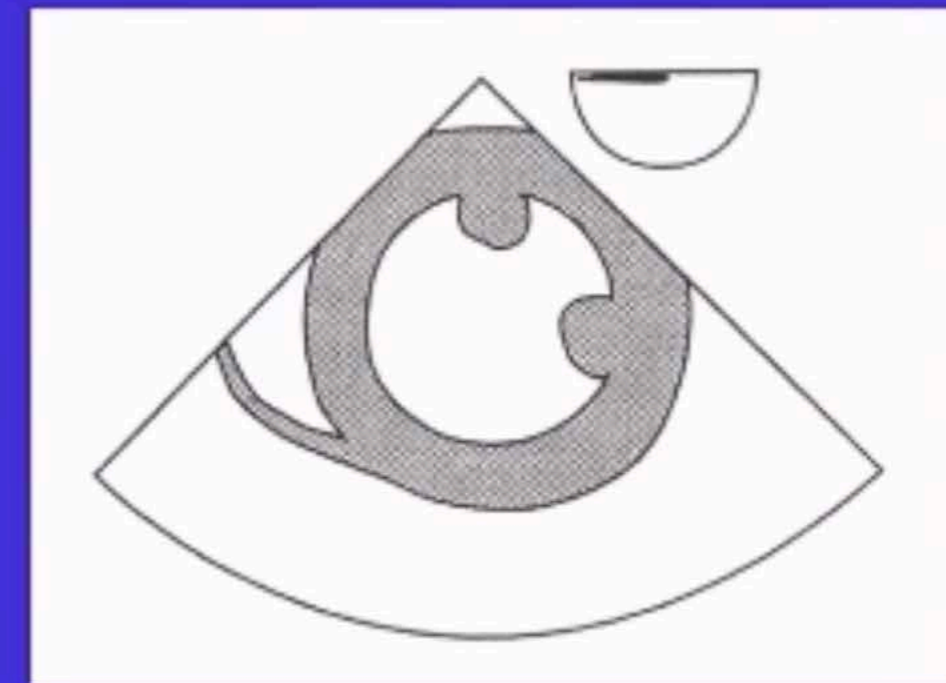
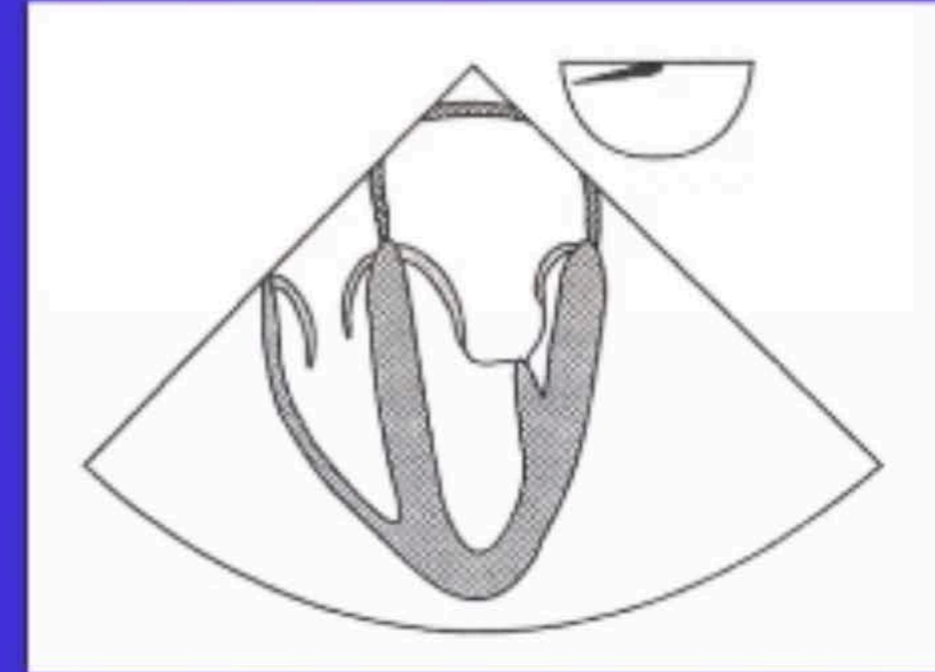
Shanewise JS, et al. *Anesth Analg* 1999;89:870-884



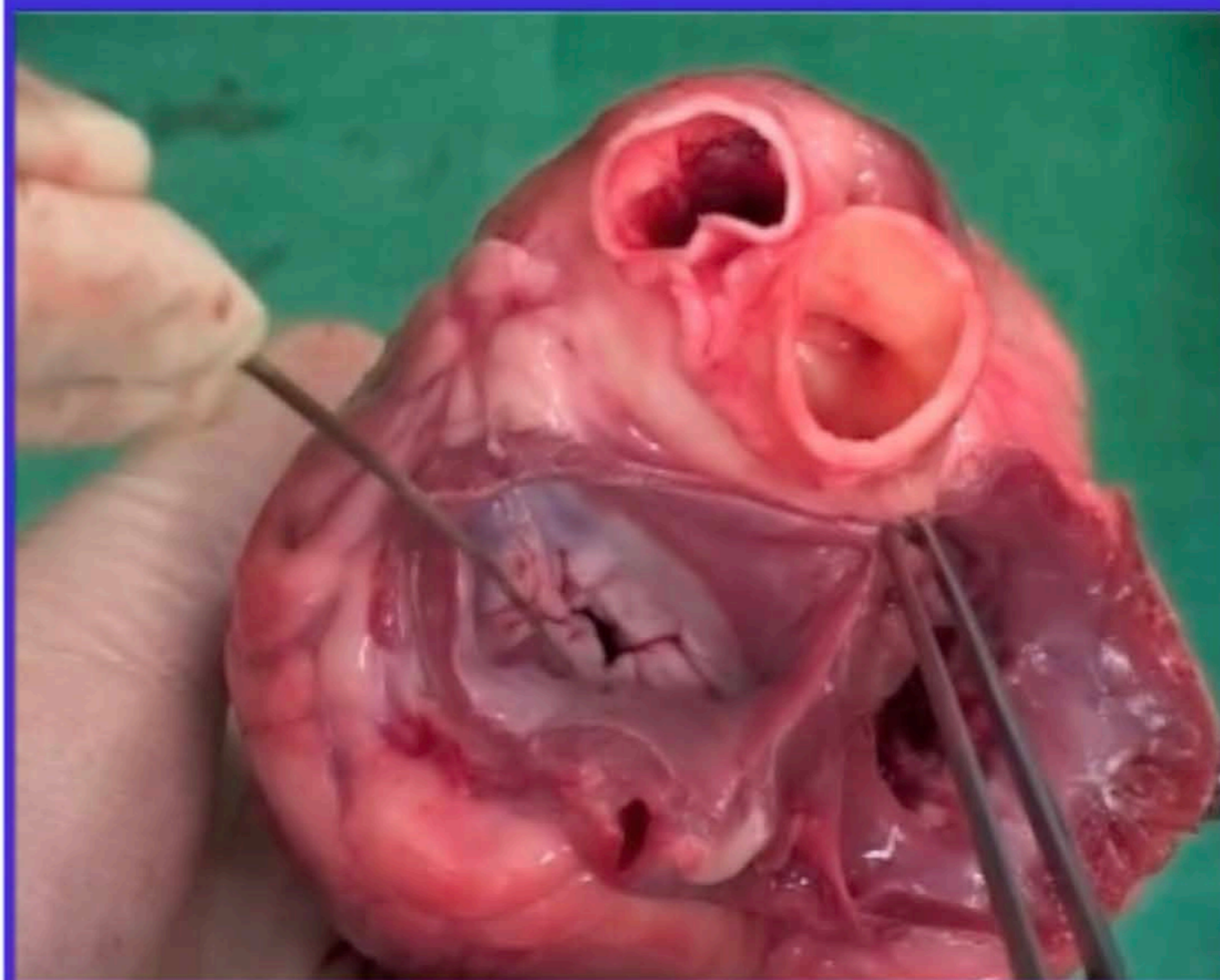
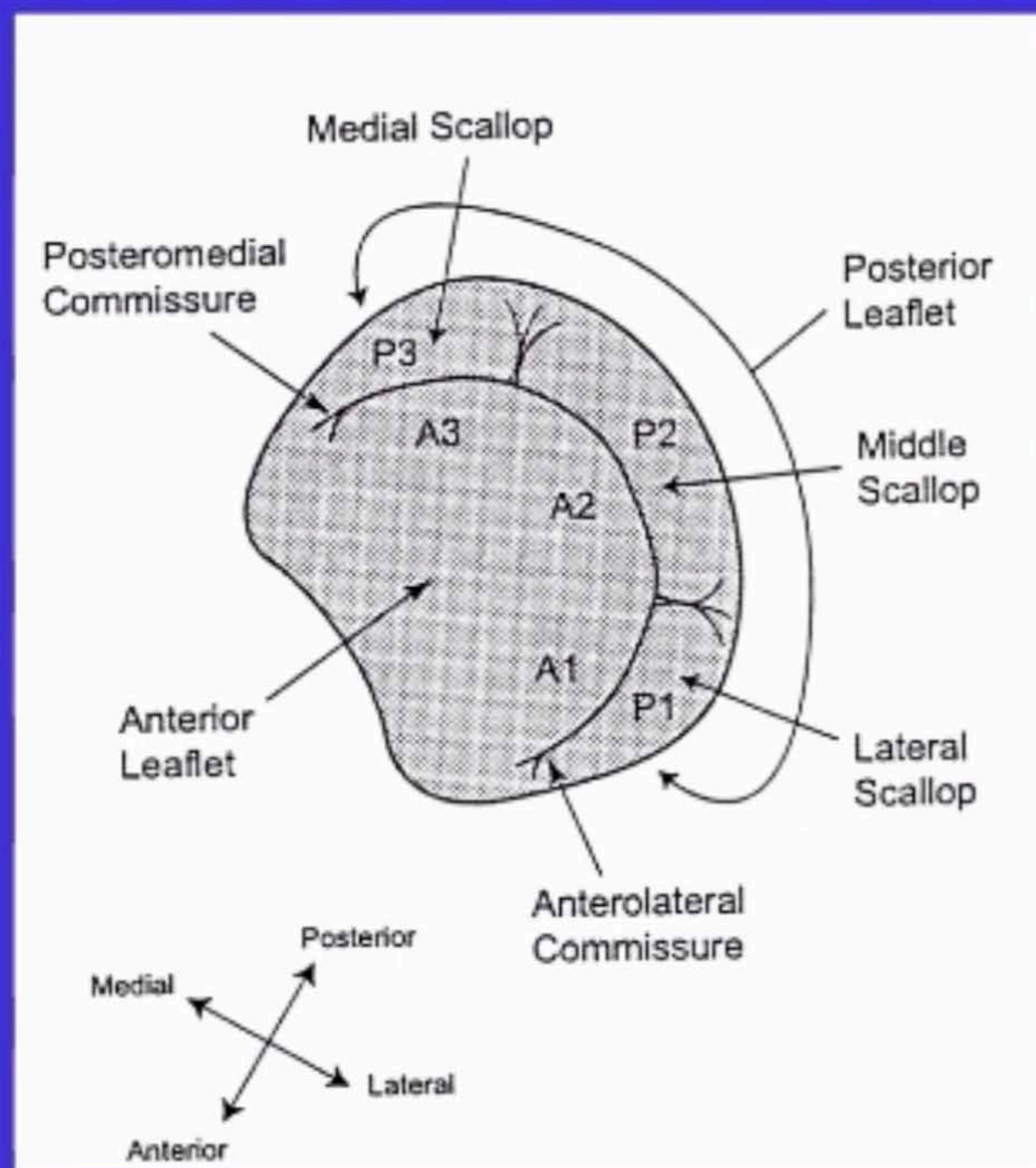


Axis

- Long axis
Parallel to major axis of LV
- Short axis
Perpendicular to major axis of LV

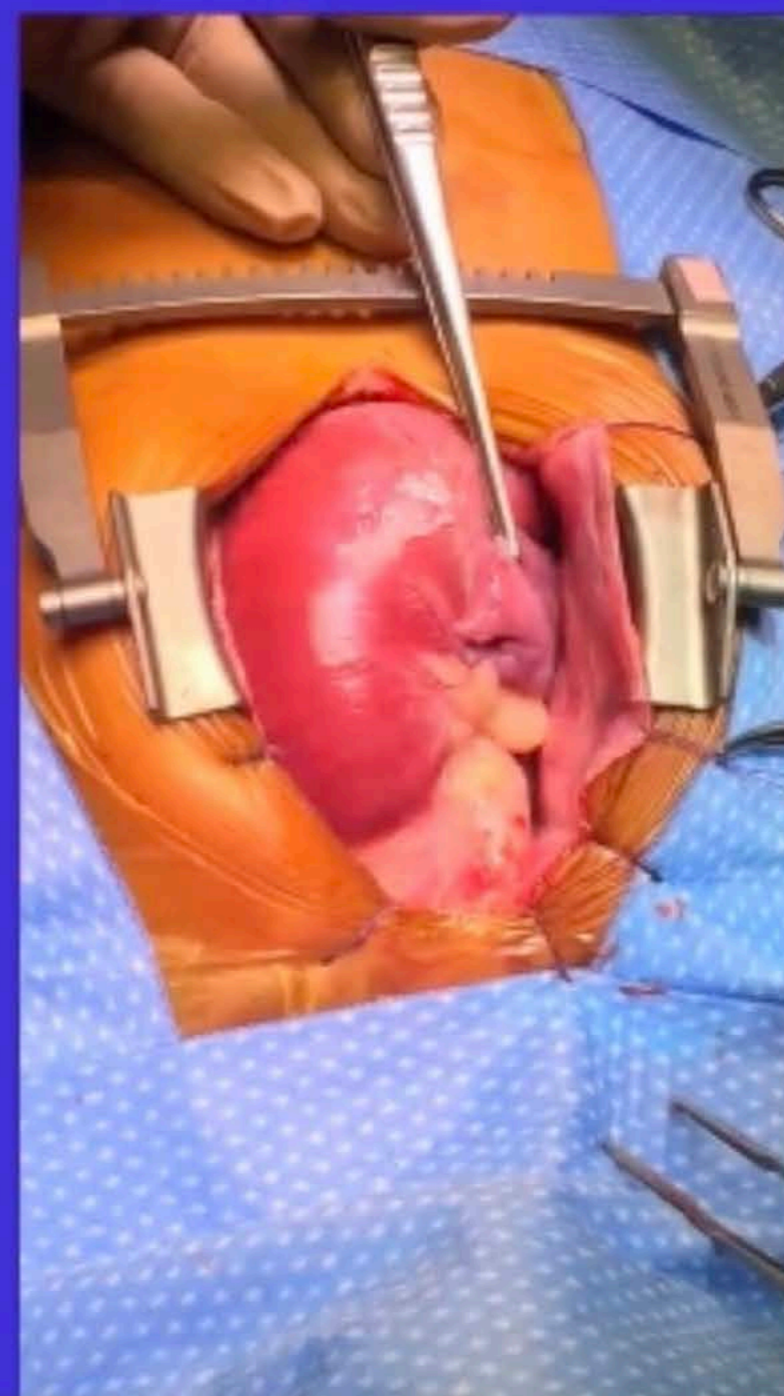


Mitral Valve



Situs Ambiguus

3 yr old girl - Left Atrial Isomerism, RPV-RA, LPV-LA, L SVC, Hepatic Veins-RA, no IVC, hemi-Azygos to CS, small VSD, ASD, PDA



TOE WORKSHOP

Sean Bennett - Castle Hill Hospital

Henry Skinner - Nottingham City Hospital

Justiaan Swanevelder - Glenfield Hospital

Association of Anaesthetists Meeting
Birmingham - September 2000



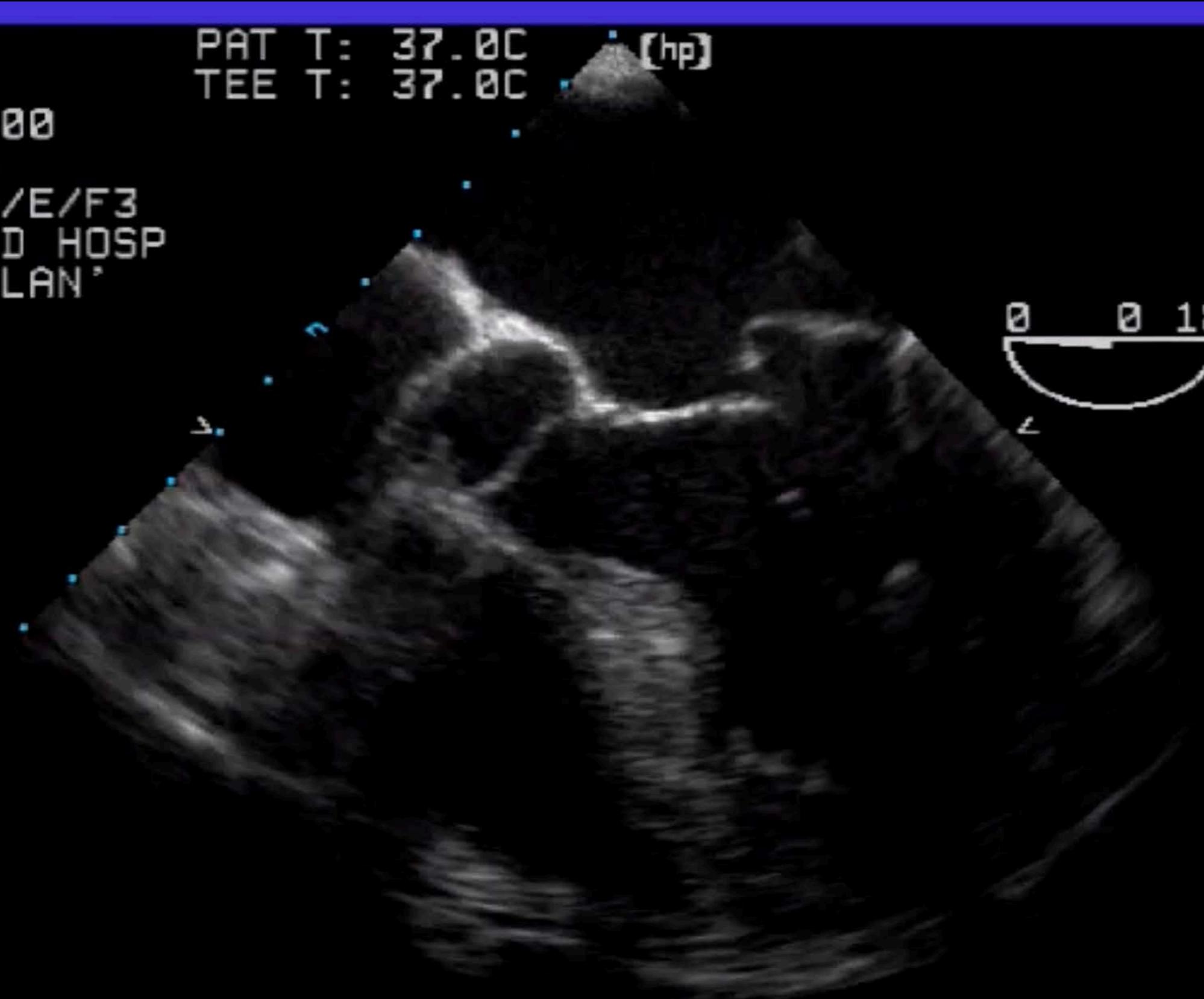
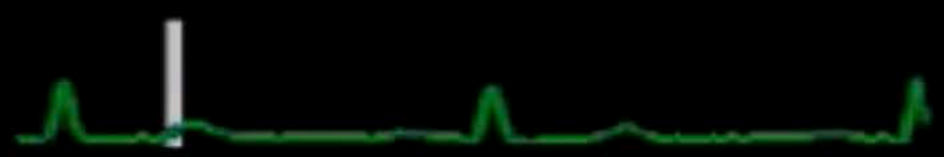
Introduction

- TOE principles
 - ultrasound physics
 - normal anatomical views
- pathology
 - mitral valve
 - aortic valve
 - aorta
- indications
 - does it makes a difference ?

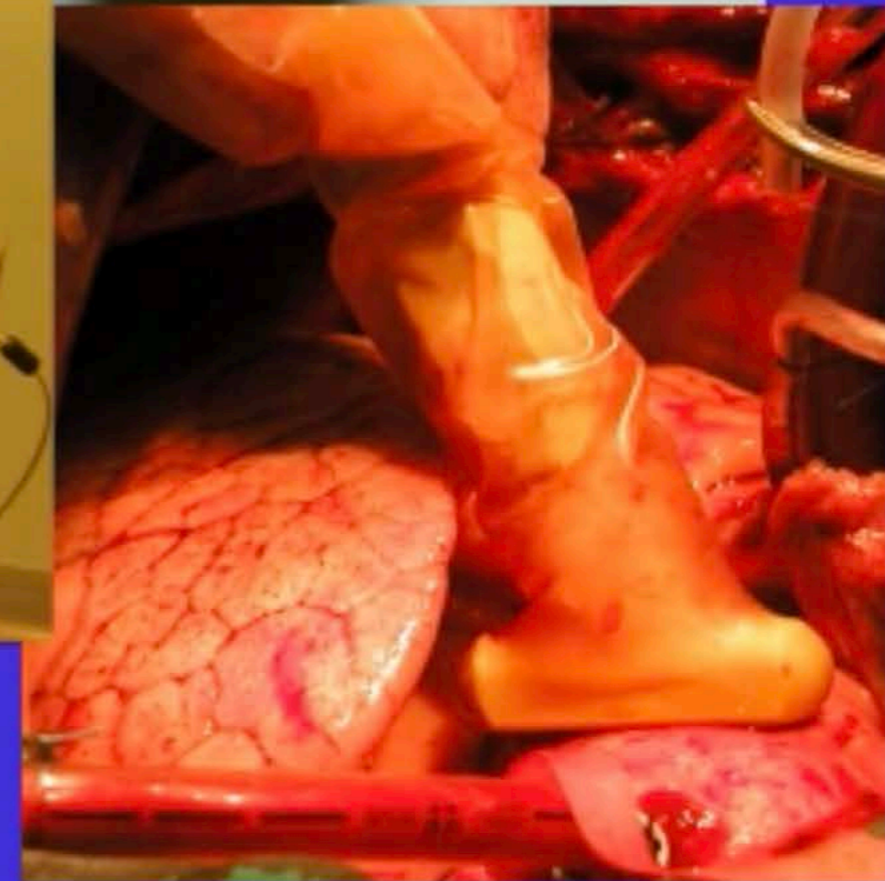
MI: 0.9
T6210
18 FEB 00
10:40:16
PROC 2/0/E/F3
GLENFIELD HOSP
ECHO 'DYLAN'
RK TOE

PAT T: 37.0C [hp]
TEE T: 37.0C

GAIN 45
COMP 65
80BPM
14CM
34HZ



The "window"



Justiaan Swanevelder (Guest)



TOE complimenting TTE



50% of diagnostic TTEs in critically ill patients successful

>90% of diagnostic TOEs in critically ill patients successful

Khandhiera BK, et al. Critical appraisal of transesophageal echocardiography.
Crit Care Clin 1996;12:235-51



Point of Care Echo - a spectrum?



FATE	Inbetween	Comprehensive TTE and TOE	Specialized operator
FOCUS	POC	"Non-cardiac"	Procedure specific
"Emergency Echo"	Monitor	3D	e.g. MV Repair
"Non-cardiac"	ICU	TDI, Myocardial deformation	TAVI-Mitraclip



“Directed” haemodynamic assessment FATE - Focussed Assessed Transthoracic Echo

European Journal of Anaesthesiology 2004; 21: 700–707
© 2004 European Academy of Anaesthesiology
ISSN 0265-0215

Original Article

Transthoracic echocardiography for cardiopulmonary monitoring in intensive care

M. B. Jensen, E. Sloth, K. M. Larsen, M. B. Schmidt

Aarhus University Hospital, Department of Anaesthesiology and Intensive Care, Skejby Sygehus, Denmark

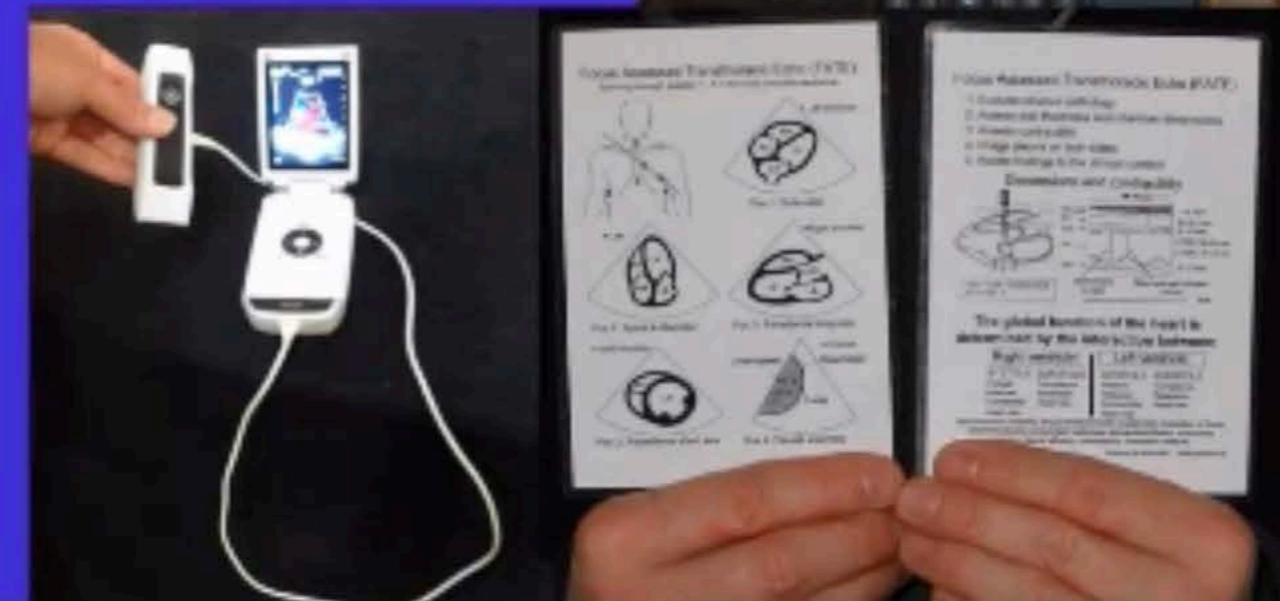


Extension of clinical examination and monitoring

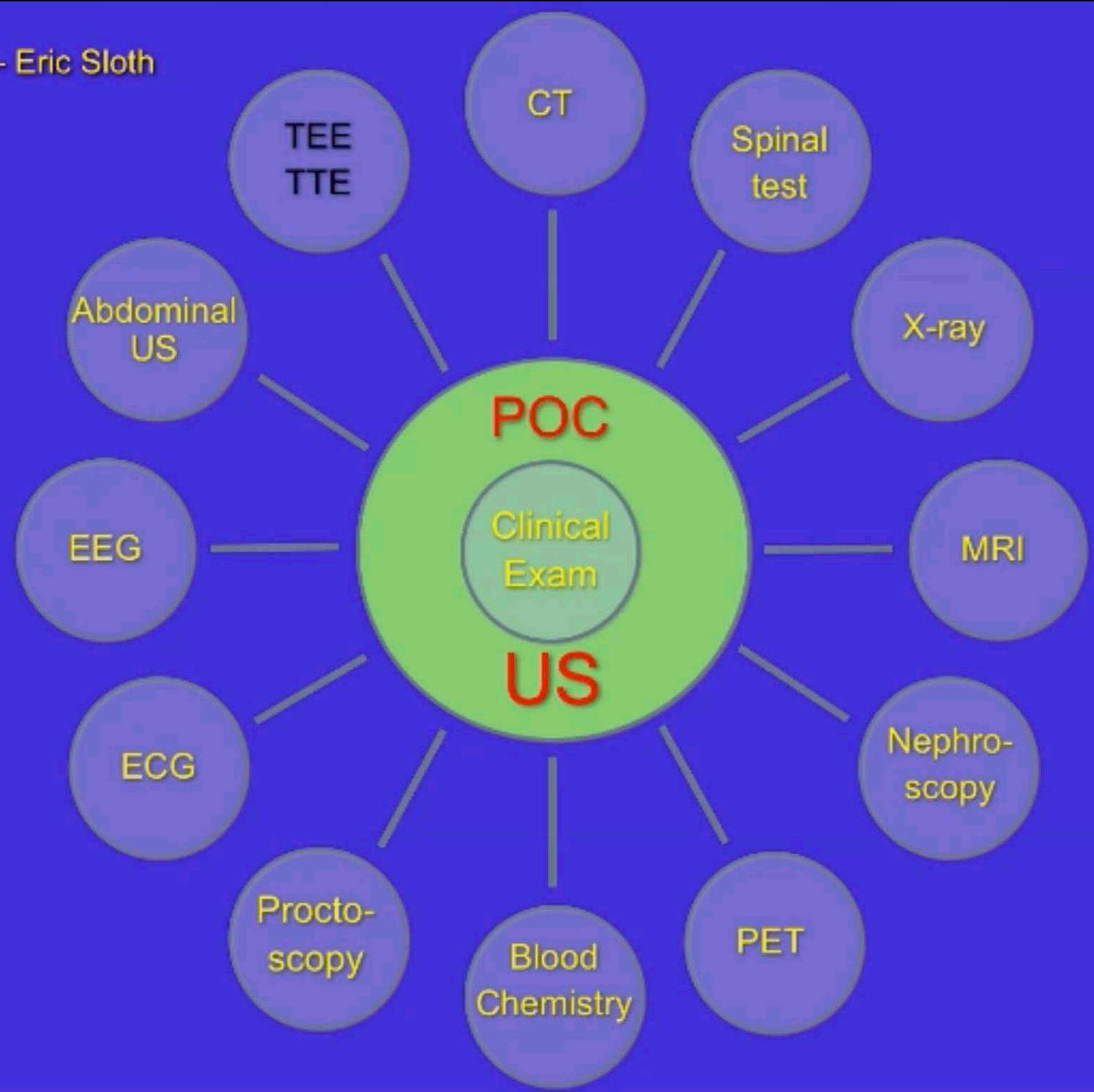
Directed at specific clinical question

Shorter duration, not comprehensive

Operator dependent



Courtesy – Eric Sloth



“Directed” haemodynamic assessment

FATE - Focused Assessed Transthoracic Echo

Jensen MB, Sloth E, et al. Transthoracic echocardiography for cardiopulmonary monitoring in intensive care. *EJA* 2004;21:700-707

FAST - Focused Assessment by sonography in trauma examination

Miller MT, Pasquale MD, et al. Not so FAST. *J Trauma* 2003;54:52-59

FEER/FEEL - Focused echocardiographic evaluation in resuscitation management/life support

Breitkreutz R, et al. Concept of an advanced life support-conformed algorithm. *Crit Care Med* 2007;35:S150-161

FOCUS - Focused Cardiac Ultrasound in Emergency Setting

Labovitz AJ, et. Focused cardiac ultrasound in the emergency setting: a consensus statement of the American Society of Echocardiography and American College of Emergency Physicians. *J Am Soc Echocardiogr* 2010;23:1225-30

HART scan - Focused Cardiac Ultrasound in Emergency Setting

Royse CF, et al. Point of Care Ultrasound for basic haemodynamic assessment: Novice Compared with expert operator. *Anaesthesia* 2006;61:849-855

“Directed” haemodynamic assessment

ROSE– Rapid obstetric screening echocardiography

Transthoracic echocardiographic assessment of haemodynamics in severe pre-eclampsia and HIV in South Africa* Anaesthesia 2015

A. T. Dennis,^{1,2} R. A. Dyer,^{3,8} M. Gibbs,⁴ L. Nel,⁵ J. M. Castro⁶ and J. L. Swanevelder^{7,8}

*Department of Anaesthesia, University of Stellenbosch, South Africa, and the Department of Obstetrics and Gynaecology, University of Stellenbosch, South Africa

- Extension of clinical examination and monitoring
- Directed at specific clinical question
- Shorter duration, not comprehensive
- Operator dependent

ANESTHESIA & ANALGESIA 2015

A Spotlight on Obstetric Anesthesia in the Developing World: Finally Getting the Attention It Deserves

Anthony Reed, MBChB, FRCA, MMed (UCT), Jesse Musokota Mumba, MBChB, and Robert Dyer, MBChB, FCA(SA), PhD

ANESTHESIA & ANALGESIA

Accepted for publication July 26, 2018

Point-of-Care Ultrasound Abnormalities in Late-Onset Severe Preeclampsia: Prevalence and Association With Serum Albumin and Brain Natriuretic Peptide

Clemens M. Ortner, Priv Doz,* Vijay Krishnamoorthy, MD, PhD,†‡ Elmarie Neethling, MD,§ Margot Flint, PhD,§ Justiaan L. Swanevelder, MD,§ Carl Lombard, PhD,||¶ Susan Fawcus, MD,# and Robert A. Dyer, PhD§

DOI: 10.1213/ANE.00000000000003759

Cardiac Structure and Function in Morbidly Obese Parturients: An Echocardiographic Study

Bigna S. Buddeberg, MD,*† Nicole L. Fernandes, MBChB, DA (SA),* Adri Vorster, MBChB, FCA (SA),* Blanche J. Cupido, MBChB, MPhil, FCP (SA), Cert Cardio (SA),‡ Carl J. Lombard, MSc, PhD,§ Justiaan L. Swanevelder, MBChB, DA (SA), FCA (SA), MMed (Anaes), FRCA,* Thierry Girard, MD,† and Robert A. Dyer, MBChB, FCA (SA), PhD* ANESTHESIA & ANALGESIA 2018

Point-of-care and lung ultrasound incorporated in daily practice

S Afr Med J 2018;108(5):376-381

E Neethling,¹ MB ChB, DA (SA), FCA (SA); F Roodt,¹ MB ChB, FCA (SA); C Beck,² MB ChB, DA (SA); J L C Swanevelder,¹ MB ChB, DA (SA), FCA (SA), MMed (Anaes), FRCA

Point of Care Echocardiography



Phased-Array (1.5-2 MHz)

Point of Care Lung Ultrasound



Curvilinear (3-5 MHz)

Point of Care Abdominal Ultrasound

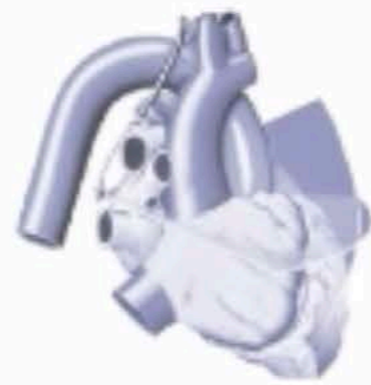
Point of Care Ultrasound for Vascular Access



Linear (8-12 MHz)

“Other”

St George's University of London
and
St George's Healthcare NHS Trust



**21st Annual Transoesophageal
Echocardiography
Course**

Thursday 16th and Friday 17th
April 2015

Course Directors: Dr. S. Bräcker
Dr. N. Fletcher and Dr. R. Sharma



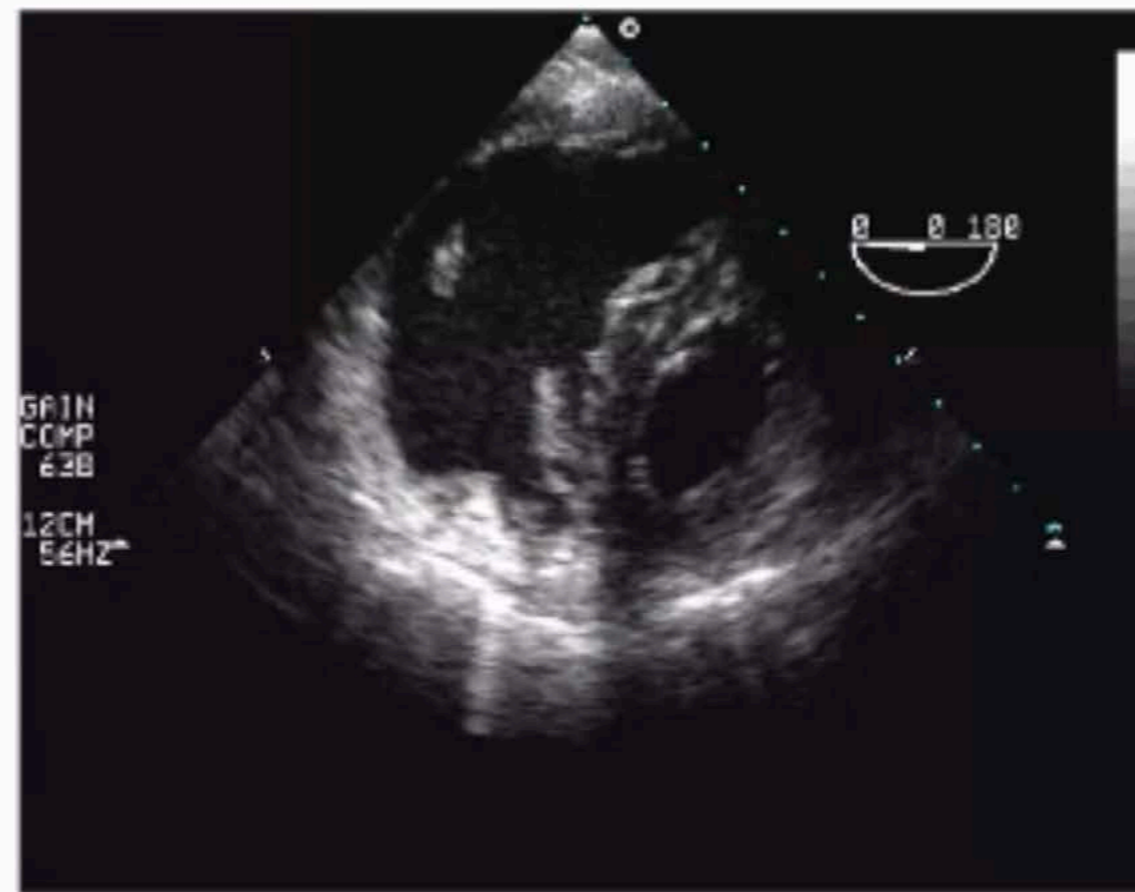
Justiaan Swanevelder (Guest)





Basic Echo Course

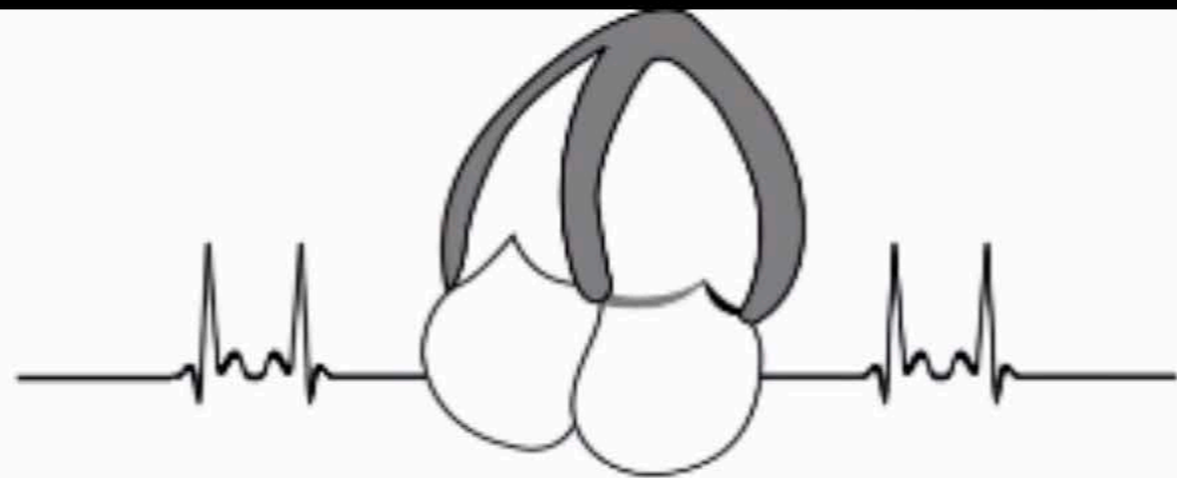
8-9th September 2012



Abstract Book

Editors: Daniel Bolliger & Jens Fassl





Emergency Echocardiography



University Hospitals of Leicester






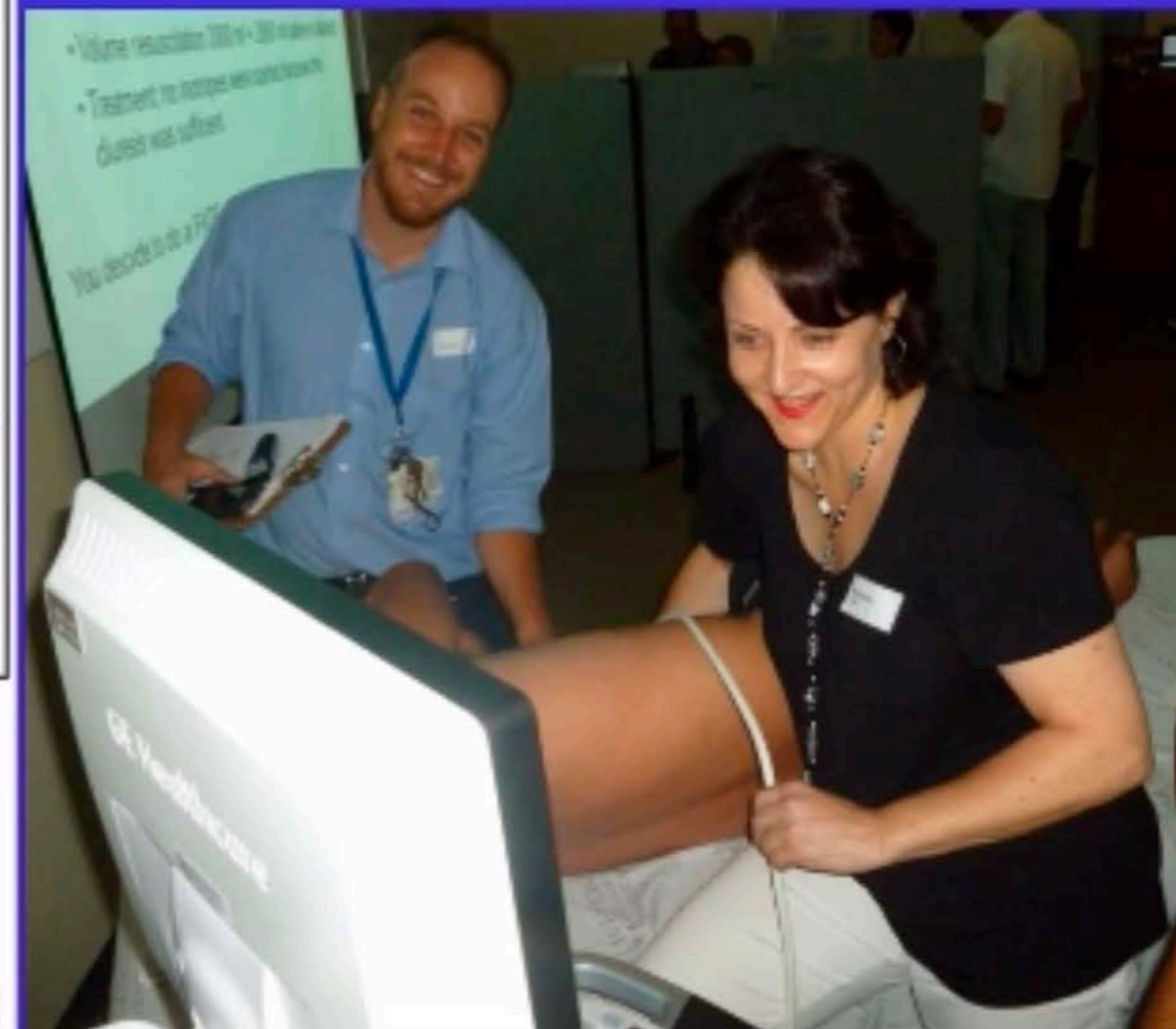
NHS Trust

Justiaan Swanevelder (Guest)



Education, training and teaching

<p>Information: Please contact Francois Roodt for more information: frroodt@uct.ac.za</p> <p>Dates: FATE 5 November 2013 12 November 2013 14 January 2014 4 February 2014 18 February 2014 1 April 2014</p> <p>Advanced FATE 17 November 2013 7 January 2014 8 April 2014</p> <p>Venue: Groote Schuur Hospital 003 Anaesthesia Department Cape Town</p> <p>Contact details: Tel: + 27 (0) 21 404 5004 Fax: + 27 (0) 21 4060589</p>	<p>Notes:</p> <ul style="list-style-type: none"> Lunch will be provided. Please indicate any special meal requirements. Maximum of 30 candidates per course. Faculty: Aarhus Denmark: Prof Erik Sloth Groote Schuur Hospital Department of Anaesthesia: Prof J Swanevelder, A Myburgh, F Roodt, L Nel. <p>Cost: R 2000.00 (including e-learning: visit www.usabcd.org) On proof of payment log-in password will be sent</p> <p>Banking details: FNB Money Account name: UCT TEE training Account number: 6239067270 Branch number: 200009</p> <p>Please use your surname as reference when doing an internet transfer</p> <p>Sponsored by: Imagination at work </p>	<p>UCT Department of Anaesthesia</p> <p>FATE and Advanced FATE courses 2013-2014</p>  <p>Focused Assessed Trans-thoracic Echocardiography</p> 
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------



FATE: Focused Assessed Trans-thoracic Echocardiography
FATE is the original focused echo protocol developed by Professor Erik Sloth, and practiced since 1989. This simple and effective roadmap is easy to learn and quickly performed. It can be applied in all possible clinical scenarios; pre-hospital, in intensive care, the wards and emergency units.
FATE courses have run since 1996 with continuous amendments making the FATE course the most effective focused cardiac ultrasound course concept available. The objective is to provide basic and advanced echocardiographic skills for physicians who are not cardiology specialists in order to guide successful treatment.
All theory is based on on-line interactive e-learning which must be completed prior to the comprehensive and structured one day hands-on course. Please visit www.usabcd.org to register for the e-learning

Hands-on Programme		
Time	FATE	Advanced FATE
07h30-07h45	Introduction	Introduction
07h45-07h50	Highlights to Hands-on Training (HOT) 1	Highlights to Hands-on training (HOT) 1
07h50-08h45	HOT1 (Knobology, FATE views)	HOT 1 (Repetition of basic FATE views, extended views)
08h45-9h00	Highlights to HOT2	Highlights to HOT 2
9h00-10h40	HOT2 (Knobology, repetition of FATE Views, M mode in position 3 and PLAX view)	HOT 2 (Repetition of HOT 1, Doppler knobology)
10h40-11h05	Highlights to HOT3	Highlights to HOT 3
11h05-12h05	HOT3 (Knobology, repetition of HOT1-2 Views, Mmode MAPSE/TAPSE, extended views)	HOT 3 (Repetition of HOT 2, Pressure estimation, CO, Oximetry)
12h05-13h05	Lunch	Lunch
13h05-13h20	Highlights to HOT4	Highlights to HOT 4
13h20-14h00	HOT4 Part one: Certification, scenario training, discussion, evaluation	HOT4 Part one: Certification, scenario training, discussion, evaluation
14h00-14h00	Tea	Tea
14h00-14h00	HOT4 Part two: Certification, scenario training, discussion, evaluation	HOT 4 part two: Certification and scenario training, advanced cases

Point-of-Care Clinical Ultrasound for Medical Students

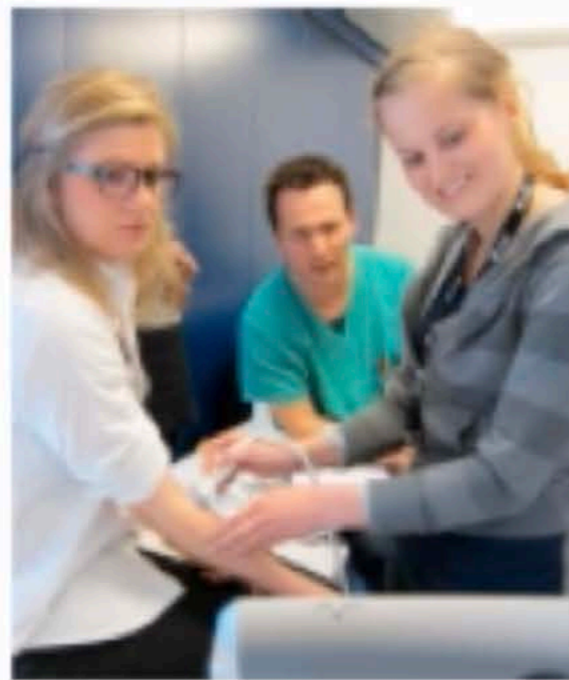
Ultrasound International Open 2015; 1: E58–E66

Authors:

J. Heiberg¹, L. S. Hansen², K. Wemmelund², A. H. Sørensen², C. Illjaer¹, E. Cloete³, D. Nolte³, F. Roodt³,
R. Dyer³, J. Swanevelder³, E. Sloth²

Introduction to ABC Ultrasound

Instruction Manual for Medical students
Cape Town University



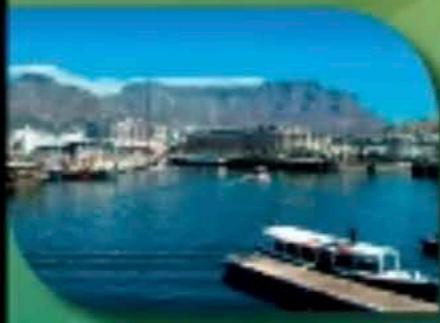
January 2014

Justiaan Swanevelder (Guest) Justiaan Swanevelder and Erik Sloth

Teaching programme

- Focused/POC heart scanning
- Focused/POC lung scanning
- Focused/POC abdominal scanning
- Vascular access

4TH ANNUAL PERIOPERATIVE CARDIOTHORACIC CONGRESS



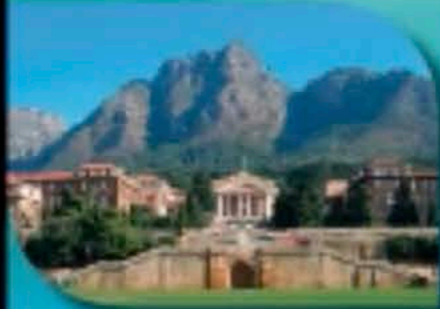
11th-14th November 2015
Vineyard Hotel Newlands
Cape Town
South Africa



University of Cape Town
Department of Anaesthesia

in collaboration with

- University of the Witwatersrand Medical School
- Harvard Medical School, Boston
- University of Toronto Medical School



A must for all Cardiologists, Cardiothoracic and Vascular Anaesthetists, Surgeons, Intensivists, Perfusionists, Sonographers and Allied Workers in the field of Cardiovascular Medicine and Research



Contact: Eastern Sun Events
Tel: +27 (0) 41 3745654
Fax: +27 (0) 41 3732042
sasa@easternsun.co.za

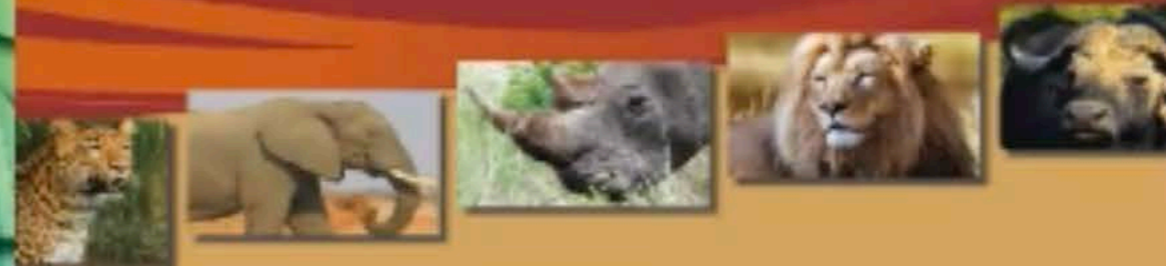
JPC CONGRESS 2015
...travels to Cape Town



Justiaan Swanevelder (Guest)

BIG 5 KRUGER ANAESTHETIC WORKSHOP

Organised by:
Nelspruit Anaesthesiologists
in collaboration with the
Department of Anaesthesia, University of Cape Town



16 - 18 NOVEMBER 2015
SKUKUZA CONFERENCE CENTRE
KRUGER NATIONAL PARK
SOUTH AFRICA

Workshops and Parallel Lectures over 2 and a half days

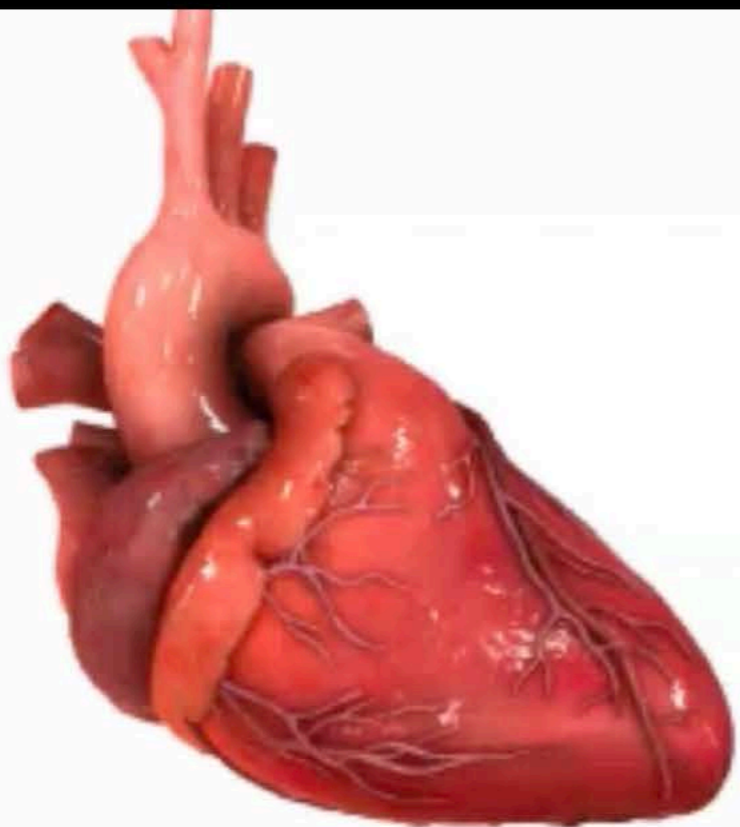
Provisional programme includes:

1. Update in Thoracic Anaesthesia - Theory and Workshop
2. An Introduction to Medical Ultra Sound for Anaesthetists and Advanced FATE - 2 Workshops
3. Ventricular Dysfunction and Hemodynamic Instability - Evaluation and Therapy
4. Acute Lung Injury
5. Current Critical Care Issues

And more - with ample time to view game or relax in nature before and after academic sessions

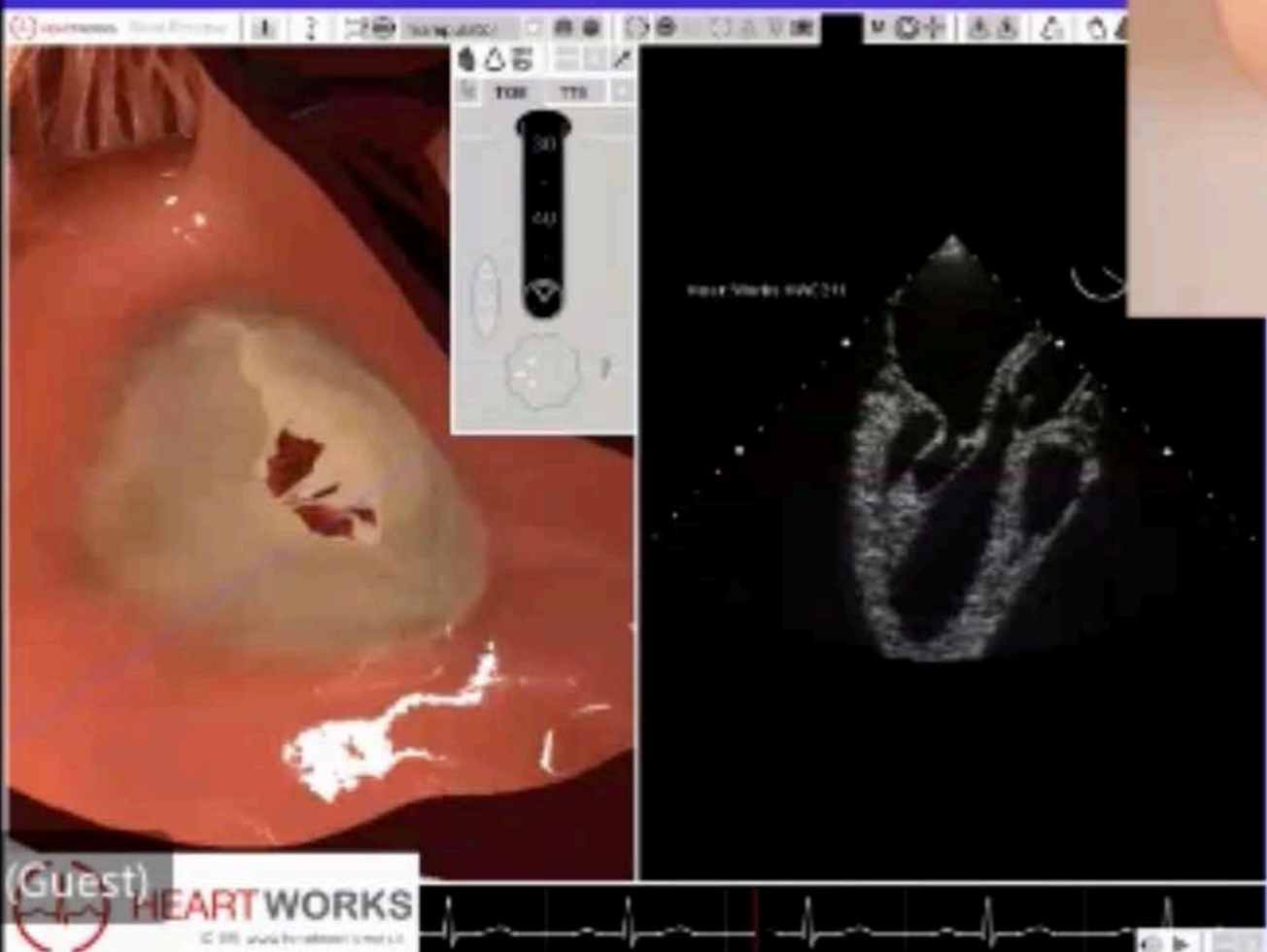
For further information please contact:
Eastern Sun Events
Tel: +27 (0) 41 3745654
Fax: +27 (0) 41 3732042
Email: knp@easternsun.co.za
Website: www.big5kruger.co.za





HEARTWORKS

www.heartworks.me.uk



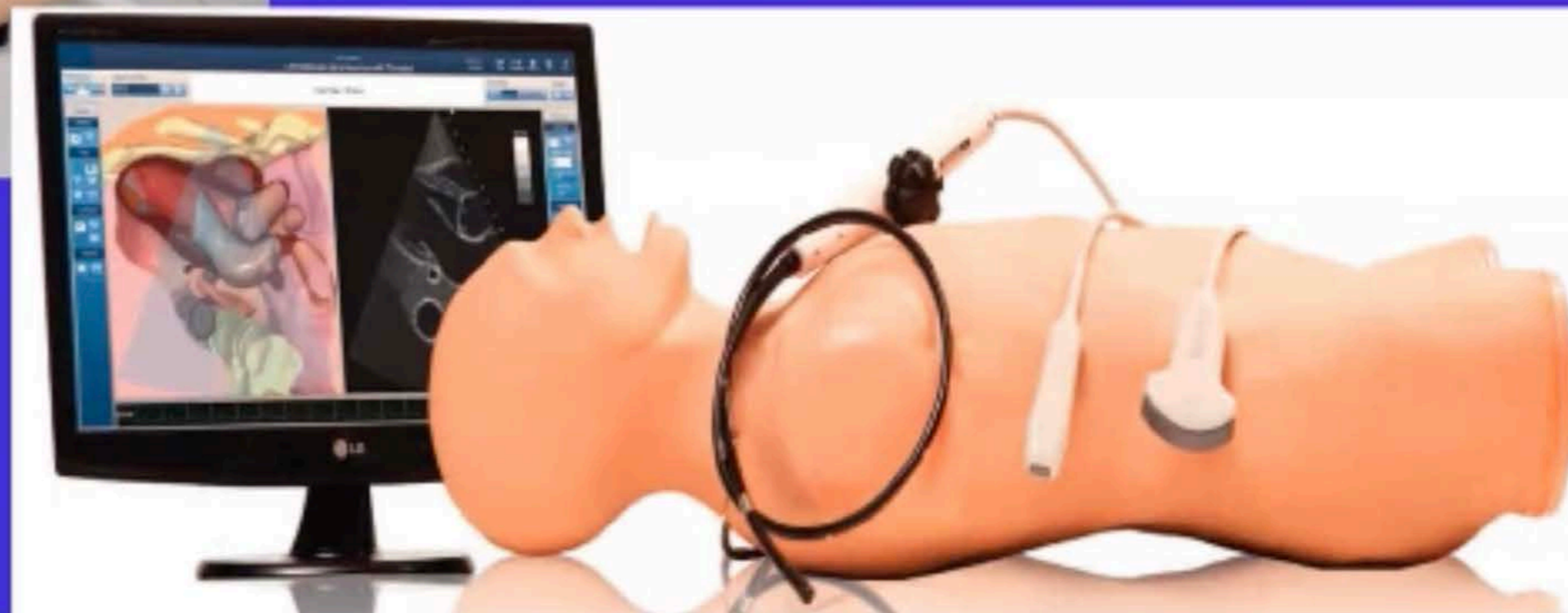
Justiaan Swanevelder (Guest)



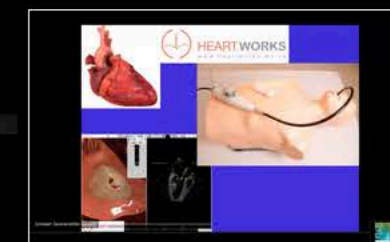


Heartworks


Vimedix





Justiaan Swanevelder (Guest)



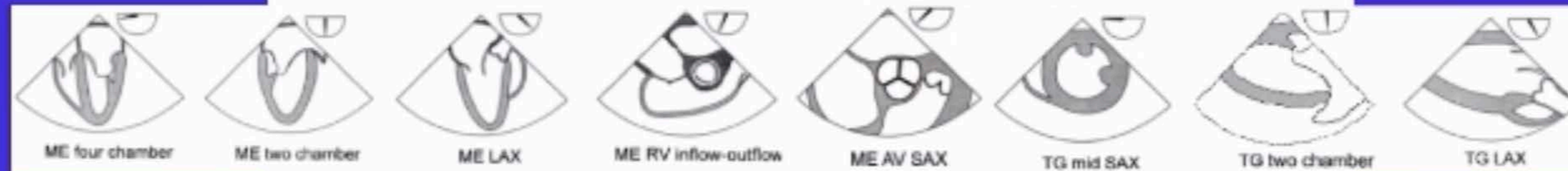
Monitor vs diagnostic tool

 **EACTA ECHO 2010**
in association with EAE
BERLIN 11th-14th September 2010

TOE Simulator Workstation  **HEARTWORKS**
Heartworks by Innovative Medical Ltd 

Session 1, Basic Teaching Course, Saturday 11.09.2010, 11:30-13:00

TOE: 8 Basic Standard Planes



**Basic Perioperative Transesophageal
Echocardiography Examination: A Consensus
Statement of the American Society of
Echocardiography and the Society of Cardiovascular
Anesthesiologists** September 2013 • Volume 117 • Number 3

Scott T. Reeves, MD, FASE, Alan C. Finley, MD, Nikolaos J. Skubas, MD, FASE,
Madhav Swaminathan, MD, FASE, William S. Whitley, MD, Kathryn E. Glas, MD, FASE,
Rebecca T. Hahn, MD, FASE, Jack S. Shanewise, MD, FASE, Mark S. Adams, BS, RDCS, FASE,
and Stanton K. Sherman, MD, FASE, for the Council on Perioperative Echocardiography of the American
Society of Echocardiography and the Society of Cardiovascular Anesthesiologists, Charleston, South
Carolina; New York, New York; Durham, North Carolina; Atlanta, Georgia; Boston, Massachusetts



Can Simulation Help to Answer the Demand for Echocardiography Education?

ANESTHESIOLOGY 2014; 120:32-41

Fernando Clau-Terré, M.D., Ph.D., Vivek Sharma, M.D., Bernard Cholley, M.D., Ph.D., Teresa Gonzalez-Alujas, M.D., Ph.D., Manuel Galiñanes, M.D., Ph.D., Artur Evangelista, M.D., Ph.D., F.E.S.C., Nick Fletcher, M.B.B.S., F.R.C.A., F.F.I.C.M.

Table 3. An Overview of Currently Available Echocardiography Simulators

	Developer	Initial Studies	Image Acquisition and Display	Hands-on	Clinical Scenarios	Internet-based Software
HeartWorks	Inventive Medical, London, United Kingdom, 2008	Bose <i>et al.</i> ⁵⁰	Virtual reality; computer digital reconstruction (grayscale images) from a beating heart model	Yes, TEE and TTE	Available	Not available
VIMEDIX	CAE Healthcare, Quebec, Canada, 2009	Platts <i>et al.</i> ⁶⁶	Virtual reality; computer-based digital reconstruction (grayscale images) from a beating heart model	Yes, TEE and TTE	Available	Available
EchoCom TEE	Weidenbach <i>et al.</i> , Germany, 2007	Weidenbach <i>et al.</i> ⁵⁹	Augmented reality; real-time 2D image derivation from a beating heart model and 3D TTE data set	Yes, TEE	Available	Not available
VirSim TEE simulator	Department of Anesthesiology, West China Hospital, China, 2012	Song <i>et al.</i> ⁷⁰	Augmented reality; real-time 2D image derived from TEE data	Yes, TEE	Available	Not available
Virtual TEE and TTE	Perioperative Interactive Education Group, Toronto, 2008	Jerath <i>et al.</i> ⁶⁴	Virtual reality; real-grayscale images of 2D standard TEE and TTE views	No	Not available	Available
CT2TEE Simulator	Kempny and Piorkowski, Poland, 2010	Piorkowski and Kempny ⁶³	Virtual reality; grayscale images from ECG-triggered CT data sets	No	Not available	Available

Characteristics of the various available simulators in echocardiography, promoters, and developers.

CT = computed tomography; CT2TEE = computed tomography to transesophageal echocardiography; ECG = electrocardiogram; TEE = transesophageal echocardiography; TTE = transthoracic echocardiography; VirSim = virtual simulator; 2D = two dimensional; 3D = three dimensional.

Forming, storming and norming

Editorial

Practice Patterns for the Use of Perioperative Transesophageal Echocardiography: A Practice not yet Made Perfect

Journal of Cardiothoracic and Vascular Anesthesia 33 (2019) 134–136



ICS/BSE – training issues?

A position statement: echocardiography in the critically ill

Kevin Fox Consultant Cardiologist, Imperial College Healthcare
k.fox@imperial.ac.uk

On behalf of a Collaborative Working Group of the British Society of Echocardiography (BSE)

JICS Volume 9, Number 2, July 2008

Echocardiography in the intensive care unit: current position, future directions

C Morris, S Bennett, S Burn, C Russell, R Jarman, J Swanvelder for the NPOCUS Critical Care Echocardiography Working Group
JICS Volume 11, Number 2, April 2010

First Pilot BSE Accreditation Examination for
Echocardiography in Intensive Care -October 2010

First ICS/BSE Accreditation Examination for
Echocardiography in Intensive Care –November 2012

Operator dependent – training issues?

Toward an ultrasound curriculum for critical care medicine
(Crit Care Med 2007; 35[Suppl.]:S290–S304)

Luca Neri, MD; Enrico Storti, MD; Daniel Lichtenstein, MD

Commentary

Specific skill set and goals of focused echocardiography for critical care clinicians

Crit Care Med 2007 Vol. 35, No. 5 (Suppl.)

Yanick Beaulieu, MD, FRCPC

ICS/BSE – training issues?

A position statement: echocardiography in the critically ill

Kevin Fox Consultant Cardiologist, Imperial College Healthcare
k.fox@imperial.ac.uk

On behalf of a Collaborative Working Group of the British Society of Echocardiography (BSE)

JICS Volume 9, Number 2, July 2008

Echocardiography in the intensive care unit: current position, future directions

C Morris, S Bennett, S Burn, C Russell, R Jarman, J Swanvelder for the NPOCUS Critical Care Echocardiography Working Group

JICS Volume 11, Number 2, April 2010

First Pilot BSE Accreditation Examination for
Echocardiography in Intensive Care -October 2010

First ICS/BSE Accreditation Examination for
Echocardiography in Intensive Care –November 2012

Accreditation Processes

Anesth Analg 2001;93:1422-7

Training and Certification in Perioperative Transesophageal Echocardiography: A Historical Perspective

Solomon Aronson, MD, FACC, FCCP*, and Daniel M. Thys, MD, FACCT†

Accreditation Processes

BRITISH JOURNAL OF ANAESTHESIA

Volume 91, Number 4, October 2003

Editorial

Accreditation in transoesophageal echocardiography: statement from the Association of Cardiothoracic Anaesthetists and the British Society of Echocardiography Joint TOE Accreditation Committee

J. Swanevelder^{1*}

D. Chin²

Departments of ¹Anaesthesia and Critical Care, and ²Cardiology, Glenfield Hospital, University Hospitals of Leicester NHS Trust, Groby Road, Leicester LE3 9QP, UK

J. Kneeshaw

Department of Anaesthesia and Critical Care, Papworth Hospital, Papworth Everard, UK

J. Chambers

Department of Cardiology, Guy's and St Thomas' Hospital, London, UK

S. Bennett

Department of Anaesthesia and Critical Care, Castle Hill Hospital, Hull, UK

D. Smith

Department of Anaesthesia and Critical Care, Southampton General Hospital, Tremona Road, Southampton, UK

P. Nihoyannopoulos

Department of Cardiology, Imperial College School of Medicine, Hammersmith Hospital, Duncane Road, London W12 0NN, UK

ACTA/BSE Accreditation in SA

CMSA - September 2014



RESEARCH

Evaluation of the quality of transesophageal echocardiography images and verification of proficiency

Robina Matyal MD¹, Faraz Mahmood MD², Ziyad Omar Knio BS², Stephanie B Jones MD¹, Lu Yeh MD³, Rabia Amir MD¹, Ruma Bose MD¹ and John D Mitchell MD¹



DEPARTMENT OF ANAESTHESIA
& PERIOPERATIVE MEDICINE
UNIVERSITY OF CAPE TOWN

Competence/Standards

Used as a “**God-term**” or **rhetorical trump card**,
regularly played as the last word in debates about
how health professionals should function

Accreditation Processes



THE LANCET

Lancet 2010; 376: 1923-58

Health professionals for a new century: transforming education to strengthen health systems in an interdependent world



Julio Frenk, Lincoln Chen*, Zulfiqar A Bhutta, Jordan Cohen, Nigel Crisp, Timothy Evans, Harvey Fineberg, Patricia Garcia, Yang Ke, Patrick Kelley, Barry Kistnasamy, Afaf Meleis, David Naylor, Ariel Pablos-Mendez, Srinath Reddy, Susan Scrimshaw, Jaime Sepulveda, David Serwadda, Huda Zurayk*

Accreditation Processes

Health workers should understand the positive and negative sides of professionalism. Far from being an exclusionary force that raises artificial barriers to entry, protects privileges, and promotes practice monopolies through credential creep,¹⁵¹ a new professionalism for the 21st century should promote quality, embrace teamwork, uphold a strong service ethic, and be centred around the interests of patients and populations.

GUIDELINES AND STANDARDS

EAE/ASE Recommendations for Image Acquisition and Display Using Three-Dimensional Echocardiography

Roberto M. Lang, MD, FASE,^{*†} Luigi P. Badano, MD, FESC,^{†‡} Wendy Tsang, MD,^{*} David H. Adams, MD,^{*} Eustachio Agricola, MD,[†] Thomas Bock, MD, FESC,[†] Francesco F. Faltra, MD,[†] Andreas Franke, MD, FESC,[†] Judy Hung, MD, FASE,^{*} Leopoldo Pérez de Isla, MD, PhD, FESC,[†] Otto Kamp, MD, PhD, FESC,[†] Janslaw D. Kasprzak, MD, FESC,[†] Patrizio Lancellotti, MD, PhD, FESC,[†] Thomas H. Marwick, MBBS, PhD,^{*} Maril L. McCulloch, RDCS, FASE,^{*} Mark J. Monaghan, PhD, FESC,[†] Petros Nihoyannopoulos, MD, FESC,[†] Natesa G. Pandian, MD,^{*} Patricia A. Pellikka, MD, FASE,^{*} Mauro Pepi, MD, FESC,[†] David A. Roberson, MD, FASE,^{*} Stanton K. Sherran, MD, FASE,^{*} Geish S. Shirak, MBBS, FASE,^{*} Lisa Sugeng, MD,^{*} Folkert J. Ten Cate, MD,[†] Mani A. Vannan, MBBS, FASE,^{*} Jose Luis Zamorano, MD, FESC, FASE,[†] and William A. Zoghbi, MD, FASE,^{*} *Chicago and Oak Lawn, Illinois; Padua and Milan, Italy; New York, New York; Essen and Hannover, Germany; Lugano, Switzerland; Boston, Massachusetts; Madrid, Spain; Amsterdam and Rotterdam, The Netherlands; Lodz, Poland; Liege, Belgium; Cleveland, Ohio; Houston, Texas; London, United Kingdom; Rochester, Minnesota; Charleston, South Carolina; New Haven, Connecticut; Merrillville, North Carolina*

(J Am Soc Echocardiogr 2012;25:3-46.)

Keywords: Echocardiography, Two-dimensional, Three-dimensional, Transthoracic, Transesophageal

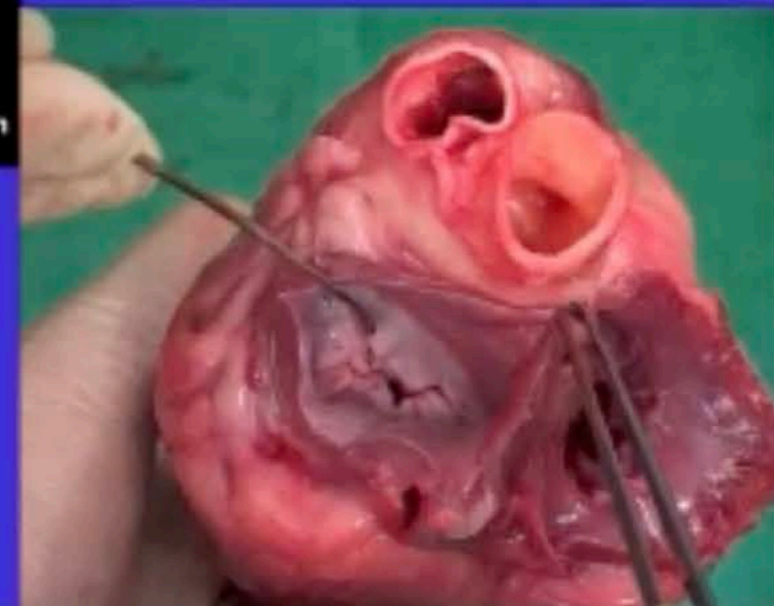
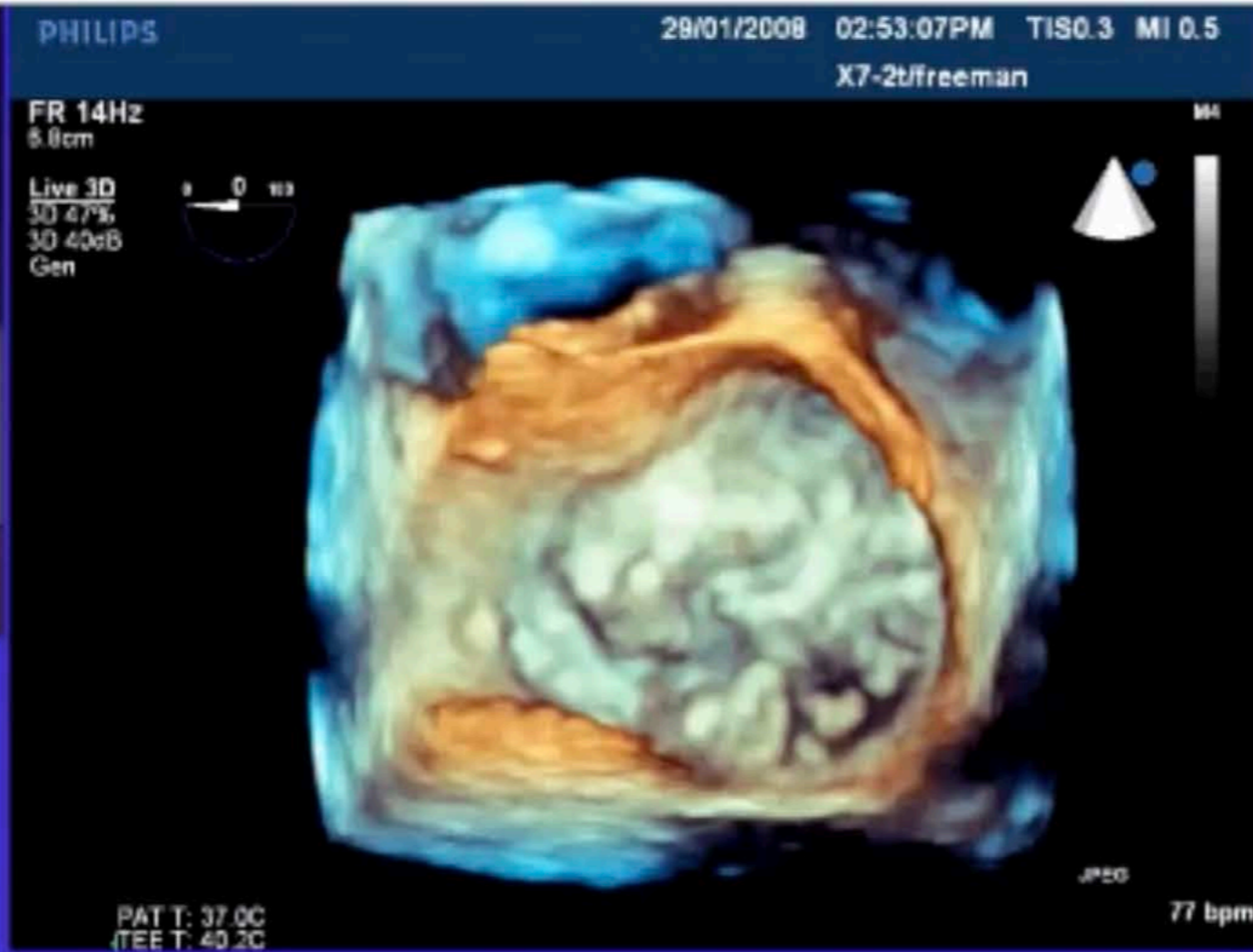
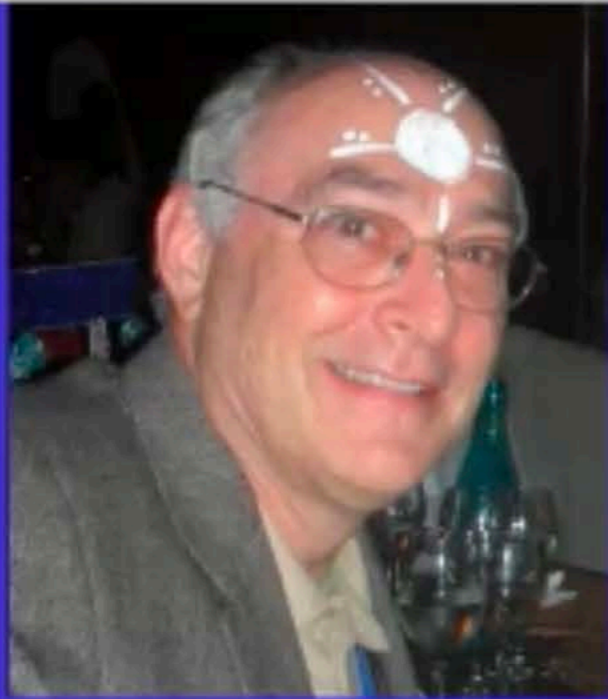
- X-plane imaging
- Live 3D
- Live 3D zoom
- 3D full volume
- 3D colour Doppler full volume

EDITORIAL

Third ultrasound dimension in anaesthesia and intensive care

A. Ng* and J. Swanevelder

BJA 2015



Justiaan Swanevelder (Guest)



- X-plane imaging
- Live 3D
- Live 3D zoom
- 3D full volume
- 3D colour Doppler full volume

Where do we start?



Global Health Care Equality

Congenital heart disease and rheumatic heart disease in Africa: recent advances and current priorities

Heart 2013;**99**:1554–1561.

Liesl Zühlke,^{1,2} Mariana Mirabel,³ Eloi Marijon³

Rheumatic Heart Disease
Congenital Heart Disease

Tuberculosis

HIV

Malaria

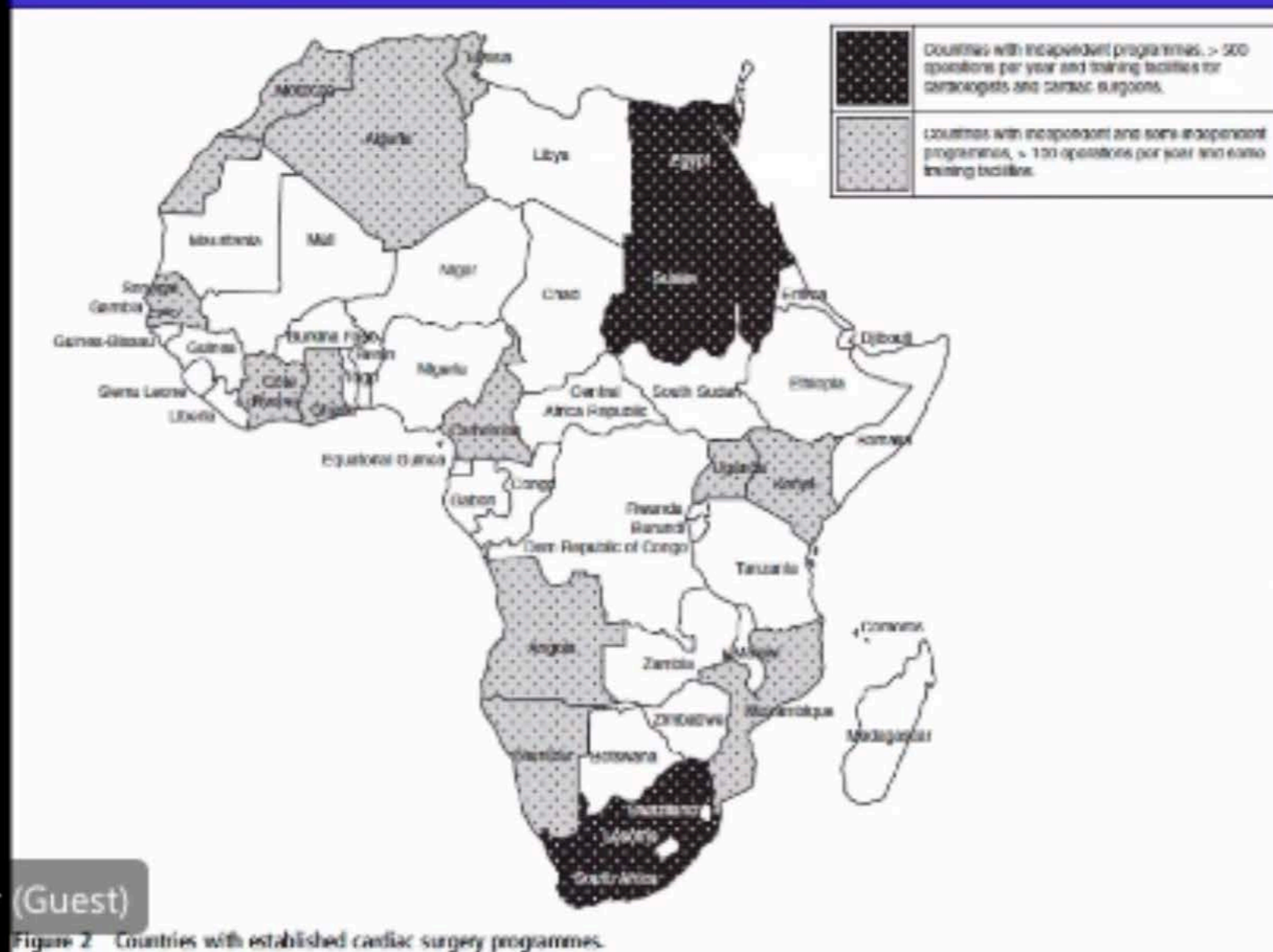
Hydatid Disease

Preeclampsia

Trauma

etc

COVID?



Justiaan Swanevelder (Guest)

Figure 2 Countries with established cardiac surgery programmes.



What is the role of education?

Has democratization of knowledge led to any meaningful change at ground level? If not, why not?

What is the role of education?

Has democratization of knowledge led to any meaningful change at ground level? If not, why not?

Can technical skill can be transferred or shared virtually?

Can hands-on skills be transferred and multiplied when there are limited in-person opportunities?

Education, training and teaching

FATE FEDERATION

ECHOSONOGRAPHER IN DEPARTMENT

WHATSAPP

33 yr old Obstetric patient Haemodynamic instability



33 yr old Obstetric patient Haemodynamic instability

Hysterotomy, stabilize

Transfer to tertiary referral hospital

Diagnosis – Hypertensive Cardiomyopathy

Doing well



Culture of lifelong learning in contrast to traditional compartmentalised model of undergraduate, postgraduate, and continuing medical education

“Education is not the filling of a pail, but the lighting of a fire.”



—William Butler Yeats

