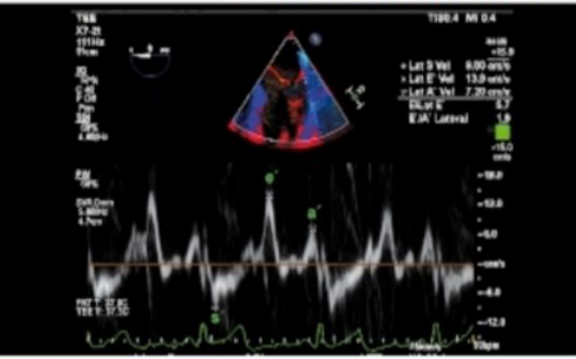
TEE Pocket Manual

SECOND EDITION



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PREFACE

The first edition of the *TEE Pocket Manual* in 2007 was well received by perioperative care and cardiology communities, having been through a revised reprint in 2011 and a Spanish translation. In the second edition, we have kept the same concise and pocket-sized format so that the pocket manual remains a practical resource for the on-the-go perioperative echocardiographer and the intensive care clinician. Many chapters have been revised to include the latest terminology and TEE views and reflect the latest recommendations from the American Society of Echocardiography (ASE) guidelines. Specifically, we are particularly pleased that our second edition includes all 28 TEE views, updated ASE grading for valvular heart disease, specifically aortic and mitral stenosis and insufficiency, and additional information on the assessment of right ventricular function relating to volume and pressure overloads. Chapter 13 on prosthetic valves has been amended to include only the most commonly used valves, as well as examples of various transcatheter aortic valves. Chapter 18 on intracardiac masses and artifacts has been expanded to incorporate TEE for catheter-based interventions, including left ventricular assist and MitraClip insertion and left atrial appendage occlusion. Chapter 21 on 3D TEE that was added to the 2011 reprint has also been expanded with more in-depth discussion and TEE images on evaluation of mitral valve anatomy and left ventricular function.

The book grew out of a practical need for a rapid reference for resident physicians, fellows, and other practitioners of

echocardiography working in dynamic arenas, such as the operating room and the intensive care unit. To be concise and portable, we limited the potential pages of references by focusing on the ASE guidelines as our primary resource, unless otherwise specified. Each chapter includes echocardiographic findings specific to 2D, color flow, and Doppler imaging modalities, representative schematics, TEE images, and charts. More than 20 new images have been added to this edition. To enhance the ease and speed of topic location, chapters are identified by color tabs. An updated laminated card serves as an additional, easy-to-use and concise resource. An e-version is also included with the hard-copy version.

Use of this pocket manual is not intended to replace the need for reading and mastering the extensive texts and guidelines on echocardiography, nor will it substitute for a detailed review for the Perioperative Transesophageal Echocardiography Certification examination. We do hope that it will become a valuable companion to anesthesiology residents, fellows, cardiology fellows, and experienced clinicians who would like to have ready access to the information contained herein.

Leanne Groban
Chandrika Rajan Garner

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Leanne Groban
Chandrika Rajan Garner

GLOSSARY OF ACRONYMS

2D	two-dimensional
3D	three-dimensional
a'	peak late mitral annular velocity
AA	aortic arch
Afib	atrial fibrillation
AI	aortic insufficiency
AL	anterior leaflet
Amax	peak atrial transmitral flow velocity
AML	anterior mitral leaflet
AR	aortic regurgitation
AS	aortic stenosis
ASA	atrial septal aneurysm
ASD	atrial septal defect
ASH	asymmetrical septal hypertrophy
AV	aortic valve
AVA	aortic valve area
BSA	body surface area
CFD	color flow Doppler
Ch	chamber
CHD	congenital heart disease
CI	cardiac index
cm/s	centimeters per second
CM	cardiomyopathy
CPB	cardiopulmonary bypass
CO	cardiac output
CS	coronary sinus
CSA	cross-sectional area
C-sept	coaptation-septum
c/s	cycles per second
CVP	central venous pressure
CWD	continuous wave Doppler
D	diastole
dB	decibels
DGC	depth-gain compensation
DT	deceleration time
DTG	deep transgastric

DVT	deep vein thrombosis
e'	peak early mitral annular velocity
ECG	electrocardiography
EDA	end diastolic area
EF	ejection fraction
Emax	peak early transmitral flow velocity
EOA	effective orifice area
ERO	effective regurgitant orifice
ESA	end systolic area
FAC	fractional area change
FS	fractional shortening
HCM	hypertrophic cardiomyopathy
HK	hypokinesis
HOCM	hypertrophic obstructive cardiomyopathy
HR	heart rate
IABP	intraaortic balloon pump
IAS	interatrial septum
IV	interventricular
IVC	inferior vena cava
IVRT	isovolumic relaxation time
IVS	intraventricular septum
kHz	kilohertz
L	left
LA	left atrium
LAA	left atrial appendage
LAP	left atrial pressure
LAX	long-axis
LCC	left coronary cusp
LUPV	left upper pulmonary vein
LV	left ventricle
LVEDP	left ventricular end diastolic pressure
LVH	left ventricular hypertrophy
LVOT	left ventricular outflow tract
LV SAX	left ventricular short axis
m/s	meters per second
ME	midesophageal
ME LAX	midesophageal long axis
MI	myocardial infarction

MPA	main pulmonary artery
MR	mitral regurgitation
ms	millisecond
MS	mitral stenosis
MV	mitral valve
MVA	mitral valve area
NCC	noncoronary cusp
PA	pulmonary artery
PAP	pulmonary artery pressure
PDA	patent ductus arteriosus
PFO	patent foramen ovale
PG	pressure gradient
PGE_1	prostaglandin E_1
PHT	pressure half-time
PISA	proximal isovelocity surface area
PL	posterior leaflet
PML	posterior mitral leaflet
PR	pulmonic regurgitation
PRF	pulse repetition frequency
PVar	pulmonary vein retrograde flow velocity
PVd	pulmonary vein diastolic flow velocity
PVs	pulmonary vein systolic flow velocity
PWD	pulsed wave Doppler
Qp	pulmonary flow
Qs	systemic flow
R	right
RA	right atrium
RAA	right atrial appendage
RAE	right atrial enlargement
RAP	right atrial pressure
RBC	red blood cell
RCC	right coronary cusp
RF	regurgitation fraction
RIMP	RV myocardial performance index
ROA	regurgitant orifice area
RV	right ventricle
RVE	right ventricular enlargement

RVH	right ventricular hypertrophy
RVOT	right ventricular outflow tract
RVSP	right ventricular systolic pressure
S	systole
S/D ratio	systolic/diastolic ratio
SAM	systolic anterior motion
SAX	short-axis
SVC	superior vena cava
SVR	systemic vascular resistance
TAPSE	tricuspid annular plane systolic excursion
TAVR	transcatheter aortic valve replacement
TDI	tissue Doppler imaging
TEE	transesophageal echocardiography
TG	transgastric
TGA	transposition of great vessels
times/s	times per second
TOF	tetralogy of Fallot
TR	tricuspid regurgitation
TTE	transthoracic echocardiography
TV	tricuspid valve
TVI	time–velocity integral
UE	upper esophageal
US	ultrasound
VC	vena contracta
Vp	propagation velocity
VSD	ventricular septal defect