Multi-Slice Computed Tomography in the Assessment of the Coronary Arteries

Essay

Submitted for Partial Fulfillment of Master Degree in
Radiodiagnosis

By

Mohamed Samir Abd El-Salam Youssef
(M.B., B.Ch)

Supervised by

Dr. Amany Mohamed Rashad Abdel-Aziz
Assistant Professor of Radiodiagnosis
Faculty of Medicine - Ain Shams University

Dr. Ahmad Mohammad Ghandour
Assistant Professor of Radiodiagnosis
Faculty of Medicine - Ain Shams University

Faculty of Medicine
Ain Shams University
2009

List of Contents

List of Figures

List of Figures (Cont.)

List of Figures (Cont.)

List of Figures (Cont.)

List of Figures (Cont.)

List of Figures (Cont.)

List of Abbreviations

3D & 4D	Three and four dimensional
AHA	American Heart Association
ASA	Acetyl salicylic acid (Aspirin)
ASE	Agatston score equivalent
Bpm	Beat per minute
CABG	Coronary artery bypass graft
CAD	Coronary artery disease
CNR	Contract-to-noise ratio
CT	Computed tomography
CTA	Computed tomographic angiography
DSCT	Dual source computed tomography
EBCT	Electron beam computed tomography
ECG	Electrocardiogram
FOV	Field of view
GCV	Great cardiac vein
HR	Heart rate
HU	Hounsfield units
IVUS	Intra-vascular ultrasound
LAD	Left anterior descending artery
LCX	Left circumflex artery
LIMA	Left internal mammary artery
LMT	Left main (coronary) trunk
MRA	Magnetic resonance angiography
MRI	Magnetic resonance imaging

List of Abbreviations (Cont.)

MSEC	Millisecond
MSV	Milliseivert (unit for radiation measurement)
NPV	Negative predictive value
PCI	Per-cutaneous intervention
PDA	Posterior descending artery
PE	Pulmonary embolism
PET	Positron emission tomography
PL	Postero-lateral artery
PPV	Positive predictive value
RIMA	Right internal mammary artery
SNR	Signal-to-noise ratio
SVC	Superior vena cava
TECAB	Totally endoscopic coronary artery bypass
TEE	Trans esophageal echocardiography
LV	Left ventricle
MESA	Multi-ethnic study of atherosclerosis

Acknowledgement

First and foremost, thanks to ***GOD****, to whom I relate any success in my life as I owe Him for his great care, support and guidance.*

Words do fail me when I come to express my sincere indebtedness, appreciation and profound gratitude to my ***Professor Dr. Amany Mohamed Rashad,*** *Assistant Professor of Radiodiagnosis, Faculty of Medicine, Ain Shams University, for her moral support, valuable supervision, encouragement and resourceful knowledge which enabled me to fulfill this work.*

Special thanks are due to ***Prof. Dr. Ahmed Mohammad Ghandour,*** *Assistant Professor of Radiodiagnosis, Faculty of Medicine, Ain Shams University, for dedicating so much of his precious time and effort and for his willing assistance, constant guidance and continuous advice.*

Finally, I would like also to express my deepest gratitude to my family for their loving support and encouragement which pushed me forward in every step in my life and helped me throughout the hard times.

Mohamed Samir

قَالُوا سُبْحَانَكَ لاَ عِلْمَ لَنَا
إِلاَّ مَا عَلَّمْتَنَا إِنَّكَ أَنتَ
الْعَلِيمُ الْحَكِيمُ

صدق الله العظيم

سورة البقرة الآية (32)