Table of Contents

Title	Page
Introduction	1
Aim of the work	3
Review of Literature	4
Basic Techniques of Cardiac CT	4
From Conventional to Spiral CT	5
From Spiral to Multislice CT	6
Detector Number and Cardiac imaging	8
Temporal Resolution in Cardiac Imaging	9
Other Factors That Improve the Image Quality of CT Techniques	11
CT Examination of the Coronary Arteries	13
Patient Preparation	13
Contrast –Agent injection	16
Cardiosynchronized Acquisition	19
Data Reconstruction	21
Image Reconstruction	24
Axial Images	24
Multiplanar Reformatting	25
Reconstruction of the Curved Plane: Curved MPR	26
Clinical uses of planimetric techniques	28
Volumetric Techniques (Volume Rendering)	29
Maximal Intensity Projection (MIP)	31
Virtual endoscopy	33
Clinical Applications of MDCT Coronary Angiography	34
Imaging Artifacts	34
Assessment of the Magnitude of the Coronary Artery Lesions	41
Identification of Atherosclerotic Plaques in coronary CT angiography	43
Assessment of native coronary arteries	45

Title	Page
Role of Noninvasive Coronary Angiography by MDCT in Clinical Practice	52
Assessment of Ventricular Volume and Function	54
Diabetes Mellitus and Coronary Heart Disease	58
DM and Myocardial infarction	60
DM and Asymptomatic CHD	62
Atherogenic Risk Factors in DM	66
Mechanisms of Increased CHD risk in diabetics	71
Patients and Methods	74
Results	82
Discussion	108
Conclusions	121
Recommendations	123
Summary	124
References	128
Appendix	
Arabic summary	