



# **Role of CT and MRI in Diagnosis of Pericardial Diseases**

Essay

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By

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# *List of Contents*

Title	Page No.
List of Tables .....	i
List of Figures .....	ii
List of Abbreviations .....	viii
Abstract .....	-
Introduction.....	1
Aim of the Work .....	15
<b><i>Review of Literature</i></b>	
▪ <b>Chapter (1):</b> Anatomy of the pericardium .....	16
▪ <b>Chapter (2):</b> Pathology of pericardial diseases .....	20
▪ <b>Chapter (3):</b> X-ray & Echocardiographic findings in pericardial diseases.....	42
▪ <b>Chapter (4):</b> CT & MRI findings in pericardial diseases .....	68
Illustrative Cases .....	98
Summary .....	110
References .....	113
Arabic Summary .....	-

## **ABSTRACT**

Pericardial diseases are important causes of morbidity and mortality in cardiovascular diseases. CT & MRI are more than adjuncts to echocardiography in pericardial diseases assessment, as they provide an excellent pericardial anatomy delineation and precise pericardial lesions evaluation including; effusion, constrictive pericarditis, thickening, masses and congenital anomalies. Ideal management needs the proper imaging modality choosing ability.

**Keywords:** Pericardial diseases - CT - MRI.

## *List of Tables*

Table No.	Title	Page No.
Table (1)	Constrictive pericarditis incidence rates	29
Table (2)	Imaging Findings in Pericardial Tamponade.	78
Table (3)	Imaging findings in constrictive pericarditis.	82

## *List of Figures*

Figure Fig.No.	Hemopericardium gross, an excellent in situ view. <b>Title</b>	<b>23</b> <b>Page</b> <b>No.</b>
Figure Figure (12)	Fibrinous pericarditis Gross, natural color. Human heart with pericardium	26 7
Figure (23)	Drawing illustrates a cutaway view of the anterior aspect of the heart.	31
Figure (34)	Pericardial fluid Photograph of a cut specimen	32
Figure (45)	Normal pericardium microscopic features	32
Figure (56)	Mesothelioma microscopic features.	34
Figure (67)	Acute aortic mesothelioma CT Photograph of sagittal reformatted images from CT data	36
Figure (78)	Well-circumscribed enhanced CT scan shows transverse sinus & left pulmonic recess.	37
Figure (89)	Axial aortic lymphoma CT scan shows posterior pericardial recess.	38
Figure (90)	Intraoperative photograph shows chamber end-diastolic view and parasternal long-axis view.	39
Figure (21)	Congenital defect in the pericardium, Frontal & lateral chest radiographs of the left pericardial defect	43 21
Figure (10)	A- TTE normal image.	44
Figure (22)	B- TTE parasternal image showing lateral	

	displacement of the apex and right ventricle.	
Figure (23)	Transthoracic echocardiogram parasternal short axis M mode	44
Figure (24)	Transthoracic echocardiogram of straight back syndrome.	45
Figure (25)	Chest X-ray of patient recently underwent a valve replacement.	46
Figure (26)	Chest X-ray of Pericardial effusion	46
Figure (27)	A very large pericardial effusion on cardiac ultrasound	47
Figure (28)	Chest X-ray of constrictive pericarditis	48
Figure (29)	Chest X-ray (lateral view) showing extensive pericardial calcifications.	49
Figure (30)	Large circumferential pericardial effusion with diastolic RV inversion	50
Figure (31)	Chronic pericarditis with thickening of the pericardium.	52
Figure (32)	Transthoracic echocardiography, M-mode in parasternal short axis view at papillary muscles level in constrictive pericarditis.	52
Figure (33)	Transthoracic echocardiography, apical four-chamber view, pulse wave Doppler recording of mitral inflow.	53
Figure (34)	A- Mature teratoma, Posteroanterior chest radiograph demonstrates an enlarged cardiac silhouette and a tooth.	54

Figure (35)	B. Collimated posteroanterior chest radiograph with echocardiography showing intrapericardial fat	65
Figure (36)	teratoma	55
Figure (37)	Lateral chest radiograph demonstrates coarse pericardial calcification with a cardiac fibroma	66
Figure (38)		55
Figure (39)	(A) 4 chamber TTE demonstrating noisy native Chest radiograph of pneumopericardium.	56
Figure (40)	recording	67
Figure (41)	(B) 4 chamber contrast TTE demonstrating large non Two dimensional echocardiography. Parasternal short-axis view with echogenic micro air bubble.	67
Figure (42)		
Figure (43)	Chest radiography in pericardial mesothelioma	57
Figure (44)	CMR of Normal Pericardium.	69
Figure (45)		
Figure (46)	Transthoracic echocardiography on the short axis view in pericardial mesothelioma	58
Figure (47)	contrast-enhanced CT & ECG-gated T1W SE image	70
Figure (48)	Chest Xray of angiosarcoma	59
Figure (49)	Cardiac computed tomography scan with	71
Figure (50)	congenital absence of the pericardium.	60
Figure (51)	Primary cardiac lymphoma	
Figure (52)	Axial contrast-enhanced CT image with	72
Figure (53)	malignant pericardial effusion	
Figure (54)	Routine posteroanterior grid chest roentgenogram	61
Figure (55)	revealed a ""water bottle""	
Figure (56)	Cine GRE image shows a high-signal-	73
Figure (57)	intensity pericardial effusion	
Figure (58)	Cross-sectional echocardiogram in the long-axis	62
Figure (59)	view illustrating a pericardial effusion with irregular	
Figure (60)	masses.	74
Figure (61)	Axial ECG-gated T1-weighted SE image	
Figure (62)	shows an effusion with high signal intensity	
Figure (63)	suggestive of hemorrhage:	63
Figure (64)	Pericardial cyst in chest X-ray:	
Figure (65)	Spiral thoracic post-contrast computed	75
Figure (66)	tomography at the level of the superior	
Figure (67)	Modified 4-chamber view showing the pericardial	63
Figure (68)	pulmonary vein entrance to the left atrium	
Figure (69)	cyst	
Figure (70)	Double-inversion recovery delayed-	76
Figure (71)	enhancement CMR demonstrating	64
Figure (72)	fat.	
Figure (73)	circumferential enhancement of the	



	pericardium consistent with pericardial inflammation.	
Figure (59)	CMR using bSSFP in a short-axis view with a circumferential pericardial effusion.	77
Figure (60)	CCT findings of pericardial calcification	79
Figure (61)	Short axis MRI showing early diastolic flattening of IVS.	80
Figure (62)	MR appearances of constrictive pericarditis.	81
Figure (63)	Contrast non-gated axial CT image demonstrating a cystic pericardial mass.	83
Figure (64)	CCT shows intrapericardial teratoma.	84
Figure (65)	Thoracic MRI. T1-weighted parasagittal image demonstrating an anteriorly located mass.	84
Figure (66)	MRI demonstrating huge right sided pericardial fibroma.	85
Figure (67)	Axial CE chest CT demonstrates pericardial mesothelioma	86
Figure (68)	Noncontrast 4-chamber MRI demonstrates pericardial mesothelioma.	87
Figure (69)	Axial CE CT (mediastinal window) shows angiosarcoma.	88
Figure (70)	(A) Axial T1-weighted image showing a large infiltrative heterogeneous signal mass. (B) Axial T2-weighted image showing the tumour.	89

Figure (71)	C Contrast-enhanced CT image of the chest shows primary pericardial lymphoma.	90
Figure (72)	4-chamber SSFP image showing pericardial lymphoma	90
Figure (73)	Axial CE CT shows metastatic pericardial lymphoma.	91
Figure (74)	Contrast-enhanced axial CT scan shows a pericardial effusion and bilateral pleural effusions.	92
Figure (75)	Axial ECG-gated T1-weighted SE images show pericardial effusion in man with carcinoma of the lung.	92
Figure (76)	CT scan of the thorax showing pericardial cyst.	93
Figure (77)	MR demonstrating a large cystic mass in right hemithorax.	94
Figure (78)	Axial CT through the thorax shows an accumulation of fat.	95
Figure (79)	CT confirmed highly calcified pericarditis.	96
Figure (80)	CT findings demonstrate post-traumatic pneumopericardium.	97
Figure (81)	Chest X-ray (PA & lat views) of cystic teratoma.	98
Figure (82)	<p>(A)The apical four-chamber view demonstrates normal left ventricular opacification and low opacification of the tumoral mass.</p> <p>(B)CT image demonstrating a septate cystic mass</p>	99

	containing septal calcification.	
Figure (83)	MRI, sagittal scan partial agenesis of the left pericardium.	101
Figure (84)	<b>(A and B)</b> Contrast-enhanced axial reformatted and coronal CT images of the thorax show lobulated thickening of the pericardium and fluid collections. <b>(C and D)</b> Contrast-enhanced axial and coronal reformatted CT images of the thorax show enlarged prevascular and pericardial lymph nodes	103
Figure (85)	<b>A-</b> Cine imaging sequence showing a large pericardial sarcoma. <b>B-</b> First-pass perfusion sequence. <b>C-</b> Delayed enhancement sequence of pericardial synovial sarcoma.	105
Figure (86)	Chest X-ray showing Cardiomegaly and pleural effusion.	106
Figure (87)	CT of the chest showing massive pericardial effusion and pericardial thickening.	107
Figure (88)	Chest radiograph. Posteroanterior <b>(A)</b> and lateral <b>(B)</b> views show a right cardiophrenic mass.	109
Figure (89)	Computed tomographic scan of the chest shows apericardial cyst.	109

## *List of Abbreviations*

Abb.	Full term
2D	Two dimensional
AMI	Acute myocardial infarction
bSSFP	Balanced steady state free precession
BTFE	Balanced turbo field echo
CCT	Cardiac computed tomography
Cine	Cinema
CK	Creatine kinase
CMR	Cardiac magnetic resonance
CT	Computed tomography
CTR	Cardio-thoracic ratio
e.g.	For example
ECG	Electro-cardio-graphy (Electrocardiogram)
esp.	Especially
et al	And others
Fig.	Figure
Figs.	Figures
GRE	Gradient echo
HIV	Human immunodeficiency virus

i.e.	That is
IVC	Inferior vena cava
IVS	Inter-ventricular septum
LA	Left atrium
LV	Left ventricle
MFH	Malignant fibrous histiocytoma
MI	Myocardial infarction
ml	Milliliter
mm Hg	Millimeter mercury
MR	Magnetic resonance
MRI	Magnetic resonance imaging
MVP	Mitral valve prolapse
PA	Pulmonary artery
PA CXR	Postero-anterior chest x-ray
PMN	Poly-morph-nuclear white blood cells
PPD	Purified protein derivative
RA	Right atrium
RPA	Right pulmonary artery
RV	Right ventricle
SE	Spin echo
SLE	Systemic lupus erythematosus
SVC	Superior vena cava

T.B.	Tubercle bacillus
Tab.	Table
TNM	1 <sup>st</sup> tumor – lymph nodes – metastasis cancer staging system
TTE	Trans-thoracic echocardiography

## INTRODUCTION

**T**he pericardium represents a simple, two-layered, fibroelastic sac that surrounds the heart and provides lubrication and protection. Normally, it is a thin-walled structure (<3 mm) with minimal pericardial fluid (<50 ml). The normal pericardium is fairly distensible, precluding excessive constraint of the ventricles (*Troughton et al., 2004*). The pericardium has been described as an intracardiac pressure modulator, limiting acute distention of any cardiac chamber (*Czum et al., 2014*).

The pericardium has several important anatomical functions including isolating the heart from the adjacent lungs and pleura to reduce the spread of infection, fixation of the heart position within the thoracic cavity and reduction of friction resistance by the presence of pericardial fluid (*Kim et al., 2007*).

Pericardial diseases are important causes of morbidity and mortality in patients with cardiovascular disease. Inflammatory diseases of the pericardium constitute a spectrum ranging from acute pericarditis to chronic constrictive pericarditis. Other important entities that involve the pericardium include benign and malignant pericardial masses,