Comparative Assessment Of The Role Of CT Versus MRI In Diagnosis Of Biliary Obstruction

An ESSAY

Submitted For Partial Fulfillment Of Master Degree In Radiodiagnosis

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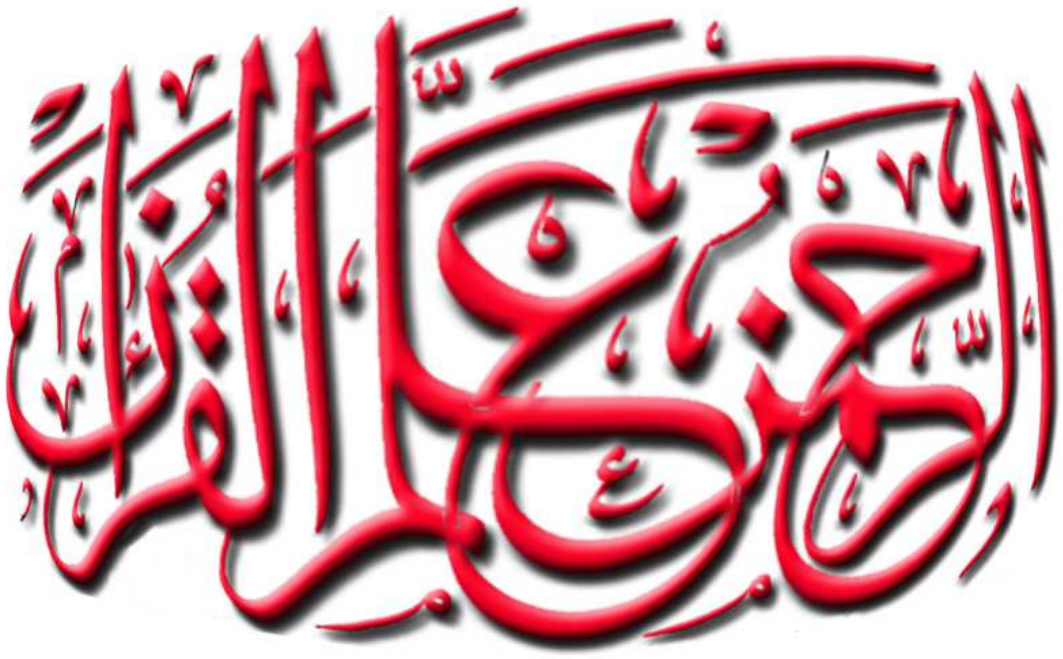
بسم الله الرحمن الرحيم



صدق الله العظيم

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Mohammed Ali Assar
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I dedicate this work to my father, my mother, my sister, my wife, and my daughter Ronzy.

CONTENTS

List of Figures

List of Tables

List of Abbreviations

2D-FSE	Two dimensional fast spin echo
3D-FSE	Three dimensional fast spin echo
CBD	Common Bile Duct
CC	Cholangiocarcinoma
CDL	Choledocholitiasis
CE	Contrast enhanced
CE-FAST	Contrast enhanced fourier acquired steady state sequence
CHD	Common hepatic duct
CPR	Curved planar reformation
CT	Computed Tomography
CTC	Computed Tomography Cholangiography
EHBDS	Extrahepatic bile ducts
ENBD	Endoscopic naso-biliary drainage
ERCP	Endoscopic Retrograde Cholangiopancreatography
ERBD	Endoscopic retrograde biliary drainage
FRFSE	Fast-Recovery Fast Spin-Echo
FSE	Fast Spin Echo
GB	Gallbladder
GMN	Gradient Moment Nulling
GRE	Gradient Echo Imaging
HAP	Hepatic arterial phase
HASTE	Half-Fourier Single-shot Turbo spin Echo
HU	Hounsfield Unit
IHBDS	Intrahepatic bile ducts
IR	Inversion recovery
IV	Intravenous
LAO	Left Anterior Oblique
MDCT	Multi-detector Computed tomography
MinIP	Minimum Intensity Projection
MIP	Maximum Intensity Projection
Mn-DPDP	Manganese-dipyridoxyl diphosphate
MPR	Muliplanar reformation
MRCP	Magnetic Resonance Cholangiopancreatography
MRI	Magnetic Resonance Imaging
PACS	Picture Archiving And Communication Systems

PD	Pancreatic duct
PSC	Primary sclerosing cholangitis
PTBD	Percutaneous transhepatic biliary drainage
PTC	Percuatneous Transhepatic Cholangiography
PVP	Portal venous phase
RAO	Right Anterior Oblique
RARE	Rapid Acquisition Relaxation Enhancement
RF	Radio frequency
ROI	Region of interest
SSFP	Steady State Free Precession
SSFSE	Steady State Fast Spin Echo
T1WI	T1 weighted image
T2WI	T2 weighted image
TE	Time to Echo
TLC	Tumor-to-liver contrast
US	Ultrasonography
VR	Volume rendering

CHAPTER I

Introduction And Aim Of The Work

INTRODUCTION

In patients with biliary obstruction, determining the level and the cause of the obstruction is essential because it can be a key factor for the next step in diagnostic or therapeutic intervention. [1*]

Many imaging modalities are available today for the evaluation of patients with suspected biliary obstruction including Ultrasonography, Computed Tomography and Invasive cholangiography. Magnetic resonance cholangiopancreatography is a relatively new technique, which has gained popularity because of its excellent diagnostic capabilities in the evaluation of biliary obstruction. [2*]

Multi-detector row CT (MDCT) is a major advance in the field of diagnostic imaging . Cholangiopancreatographic images can be produced using a workstation with advanced postprocessing techniques such as multiplanar reformations (MPR) and minimum intensity projections (MIP). The MPR images using MDCT gives rapid assessment of the pancreaticobiliary ducts along different planes without loosing information about the surrounding structures. The combined use of MPR and MIP techniques significantly improves the images of the pancreatic and bile ducts and their site of confluence compared with those obtained by the axial CT. [3*]

Magnetic resonance cholangiopancreatography (MRCP) is a unique noninvasive technique for the diagnosis of biliary obstruction. MRCP