

# 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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**Mohammed Ali Assar**  
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*I dedicate this work to my father, my  
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## **List of Abbreviations**

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

<b>PD</b>	Pancreatic duct
<b>PSC</b>	Primary sclerosing cholangitis
<b>PTBD</b>	Percutaneous transhepatic biliary drainage
<b>PTC</b>	Percutaneous Transhepatic Cholangiography
<b>PVP</b>	Portal venous phase
<b>RAO</b>	Right Anterior Oblique
<b>RARE</b>	Rapid Acquisition Relaxation Enhancement
<b>RF</b>	Radio frequency
<b>ROI</b>	Region of interest
<b>SSFP</b>	Steady State Free Precession
<b>SSFSE</b>	Steady State Fast Spin Echo
<b>T1WI</b>	T1 weighted image
<b>T2WI</b>	T2 weighted image
<b>TE</b>	Time to Echo
<b>TLC</b>	Tumor-to-liver contrast
<b>US</b>	Ultrasonography
<b>VR</b>	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. <sup>(1\*)</sup>

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. <sup>(2\*)</sup>

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 losing 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. <sup>(3\*)</sup>

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