شبكة المعلومات الجامعية

التوثيق الإلكتروني والميكروفيلم

بسم الله الرحمن الرحيم

HANAA ALY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

HANAA ALY

شبكة المعلومات الجامعية

التوثيق الإلكتروني والميكروفيلم

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار

HANAA ALY

Role of Doppler ultrasound surveillance in early detection of vascular complications among liver transplant recipients

Submitted for partial fulfillment of MD degree in Diagnostic and Intervention Radiology

By:

Ahmed Abdellatif Abdelhaleem Daoud

M.B.B.C.H., M.Sc. Diagnostic and Intervention Radiology

Supervised By:

Prof. Dr. Lobna Abdelmoniem Habib

Professor of Diagnostic and Intervention Radiology.

Faculty of Medicine

Ain Shams University

Prof.Dr. Mohamed Sobhy Hassan

Assistant. Professor of Diagnostic and Intervention Radiology

Faculty of Medicine

Ain Shams University

Prof.Dr. Ahmed Hassan Soliman

Assistant. Professor of Diagnostic and Intervention Radiology

Faculty of Medicine

Ain Shams University

Faculty of medicine

Ain Shams university

2021

ACKNOWLEDGMENT

I would like to express my deepest gratitude and cardinal appreciation to ***Prof. Dr. Lobna Abdelmoniem Habib*** *Professor of Diagnostic and intervention Radiology Faculty of Medicine - Ain Shams University, who kindly supervised and motivated the performance of this work.*

I'd like to express my respectful thanks and profound gratitude to ***Prof. Dr. Mohamed Sobhy Hassan*** *Assistant Professor of Diagnostic and intervention Radiology. Faculty of Medicine - Ain Shams University for his keen guidance and valuable advice.*

I am also delighted to express my deepest gratitude and thanks to ***Prof. Dr. Ahmed Hassan Soliman****, Assistant professor of Diagnostic and Intervention Radiology. Faculty of Medicine - Ain Shams University for his continuous supervision, valuable advices, constant support and great help throughout this work.*

LIST OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

Abb.	Full term
ALDLT	Adult living Donor Liver Transplant
AIH	Autoimmune Hepatitis
BMI	Body Mass Index
CT	Computed tomography
DSA	Digital Subtraction Imaging
DUS. US	Doppler Ultrasound. Ultrasound.
ESLD	End-Stage Liver Disease.
GRWR	Graft to Recipient Weight Ratio
HA/HAT/HAP/HAR/HAS RHA/LHA	Hepatic Artery/ Thrombosis/Pseudo-aneurysm/Rupture/Stenosis. Right and left HA.
HCC	Hepato-celleular Carcinoma.
HRS	HepatoRenal Syndrome
HVs, RHV, LHV, MHV	Hepatic veins. Right Left and Middle Hepatic veins.
HVT/HVS	Hepatic vein Thrombosis/Stenosis.

IODUS	Intra-operative Doppler Ultrasound.
IO, PO	Intra-operative/Post-operative.
IVC	Inferior vena cava
LAI	Liver Attenuation Index
MRI	Magnetic resonance imaging
MELD	Model for End-Stage Liver Disease
NAFLD	Non-alcoholic Fatty Liver Disease
NASH	Non-alcoholic Steato-hepatitis.
PBS/ PSC	Primary biliary cirrhosis/cholangitis
PV, RPV, LPV	Portal vein, Right and left PV
PVT/PVS/PVV	PV thrombosis/Setnosis/Velocity.
SBP	Spontaneous Bacterial Peritonitis
TLV	Total liver volume
TIPPS	Trans-jugular Intra-hepatic Portosystemic Shunt.
PO	Post-Operative

INTRODUCTION

Introduction

Living donor liver transplantation (LDLT) has been the last resort to efficiently treat end-stage liver disease boosted by the recent advances as regard the surgical technology, radiological appliances and new immune-suppressants. **(Fisher et al., 2017)**.

Vascular complications among liver transplant recipients are considered as major threats to liver transplant recipients' survival. LDLT (Living donor liver transplantation) recipients are prone to suffer from vascular complications due to many reasons; for example, the nature of slender anastomotic vessels and their unavoidable surgical manipulation through the reconstruction process.

Routine intra-operative and postoperative surveillance using recent advances in Doppler ultrasound devices is believed to play a major role in early diagnosis of any possible vascular complications allowing timed and appropriate management, eventually increasing chances of survival for liver graft and recipients. **(Shi et al.,2021).**

Multimodality diagnostic tools along with minimally invasive interventional radiology procedures are the new revolutionary solutions to identify and manage post liver transplantation vascular complications starting from the intra-operative evaluation, through the early and late phase post-operative follow-up. **(Delgado-Moraleda et al., 2019).**

The HA blood flow has been falsely assumed to play a passive role in the liver hemodynamics post-transplantation, as per review to many prior evidence-based data proving the inverse relationship between the HA and PV blood flow especially at the intra-operative evaluation and early post-operative surveillance.

The arterial flow is seen inversely related to the portal venous flow and changes of the blood flow in the HA and PV are reciprocally counteracted in an interplay known as the hepatic arterial buffer system (HABR). These changes are noted along with many other hemodynamic changes post ALDLT. **(Salman et al., 2021).**